



Navigating uncertainties of the EU Digital Product Passport (DPP): How to prepare now as a company

January 2023

Three DPP publications with different purposes



Enabling circularity through transparency: Introducing the EU Digital Product Passport

CONTENT

- Introduces EU DPP and objectives
- Summarizes EU DPP status as of December 2022
- Outlines options for open policy elements and discusses implications

PURPOSE

Informs about DPP and shapes regulatory discussions incl. corporate engagement

Focus of this publication



Navigating uncertainties of the EU Digital Product Passport: How to prepare now as a company

CONTENT

- Introduces EU DPP from a corporate lens
- Outlines why companies should act now and how they can prepare
- Highlights challenges and additional growth opportunities

PURPOSE

Prepares companies and motivates to participate in regulatory discussions



The EU Digital Product Passport shapes the future of value chains: What it is and how to prepare

CONTENT

- Summarizes regulatory status
- Illustrates key implications along electronics value chain
- Highlights actions companies and the EC can take to prepare for the DPP

PURPOSE

Informs all readers and combines all publications

Executive summary



Intro to DPPs

DPPs will be **mandatory across many industries in the EU** in the coming years, starting with batteries

- A digital product passport (DPP) is a **structured collection of product related data** across a product's lifecycle
- **Many aspects in the EU DPP regulation are still uncertain** (e.g., specific data requirements, level of application, ...)
- Nevertheless, it is **key for companies to take action now**



Why act now

Multiple reasons for companies to act now:

- **Companies** placing products on EU market **will have to comply with DPP regulation** in the coming years
- Already now, **companies face several urgent issues**, e.g., reporting and environmental challenges, ...)
- **By preparing for the DPP now, companies can mitigate the impact of such issues & unlock clear benefits**
 - Influence regulation
 - Improve compliance & resilience
 - Unlock investment synergies
 - Increase transparency



How to prepare

Companies can start with key no-regret actions to prepare themselves for the EU DPP

- 1 Engaging in **shaping policy** to tackle uncertainties and ensure inclusion of business perspective
- 2 Assessing **product data** availability and filling in the gaps
- 3 Informing and involving all **relevant teams** in the DPP implementation
- 4 Preparing for **tech changes**, focusing on interoperability



Key challenges

Early preparation and proactive involvement in the DPP process will **help resolve challenges** incl.

- Enable **transparency** while maintaining **confidentiality**
- Data and tech **interoperability**
- **Collaboration** across the VC
- Dealing with **regulatory uncertainties**



Growth opportunities

DPP can help **unlock sustainable growth opportunities**, such as e.g.

- First-mover advantage for sustainable companies when moving ahead of the regulation
- Increased customer loyalty, price premium and better positioning of the product through improved transparency and communication of sustainable product benefits
- Improved productivity and quality of resources, e.g., ability to choose better inputs and reduce product returns



Conclusion

Despite some challenges, uncertainties and a lengthy timeline, **companies benefit from preparing for DPP implementation now**

- Being an early adopter, even moving ahead of the DPP regulations, can **mitigate risks and unlock growth opportunities**
- **BCG & WBCSD encourage companies to connect with us** e.g., to join the discussion on the regulatory process or to engage on how to best prepare for the EU DPP

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DPP will be a game changer



DPP is definitely an opportunity, it could really help the recycling process and management of products at the end of life



Powerful tool to create transparency and enable aggregation of information into the building passport. DPP is key to becoming more circular



Current design principles can be a barrier to the next product's life, but the DPP could help change that mindset

DPP proposed as key tool to close gap between ambitions and reality of circularity by the European Commission

Urgent environmental issues of circularity ...



Only 9% of the world is circular



Need for 2.3 planets by 2040 to cover increasing global consumption of resources



75% of extracted resources are non-renewable

... demand companies to take on a key role in the solution

Companies are striving to become **circular leaders**

- **Improve durability, reusability, upgradability, and reparability** of products via circular design
- **Enable high-quality recycling and increase recycled content** to reduce use of virgin materials
- **Reduce carbon and environmental footprints**
- **Tap into new sources of value creation** (e.g., product-as-a-service offerings)

High circular ambitions come with **challenges in reality**

- **Struggle** to define **circular starting point**
- **No official mechanism** in place to **measure and increase circularity**
- **Issues with transparency** on environmental impact in **opaque VCs**
- **Frequent regulatory changes** and increased reporting requirements



DPP is a key tool proposed by the EC to create the **digital landscape, data-exchange mechanisms, and transparency** needed to **close information gaps** in value chains which enables **better sourcing decisions** and **closed-loop activities** in order to **tackle major environmental issues** and tap into the **\$4.5tn opportunity** of the circular economy

DPP could accelerate the green & digital transition ...



Promote the transition to the circular economy to reduce waste and the dependency on virgin raw materials



Enable informed, more environmentally-conscious decisions to facilitate sustainable design, production and consumption



Create transparency, traceability and consistency in VCs by fostering efficient digital information sharing

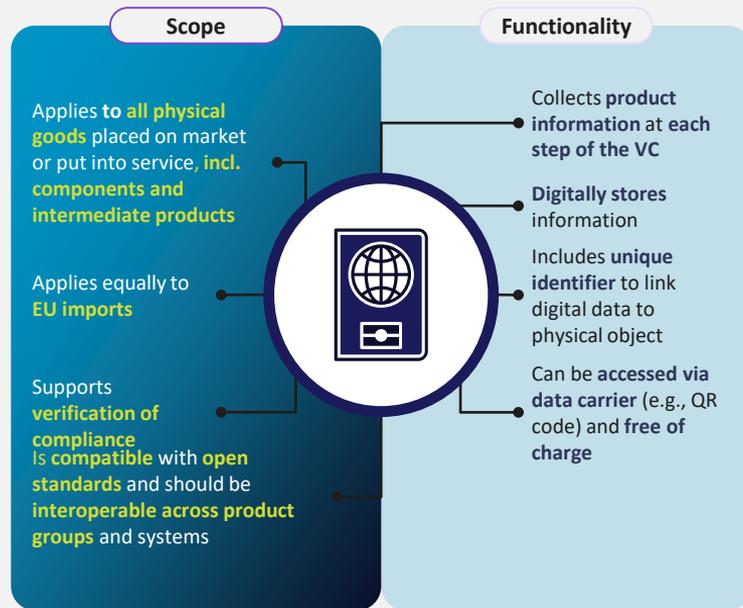


Serve as digital market intelligence tool to streamline compliance monitoring and allow for future modification of requirements



Drive the digital transition of public and private sector by building on data and technology

... by promoting information sharing & collaboration



DPP facilitates data collection and access – earlier DPP creation further advances data handling along VC

DPP creation

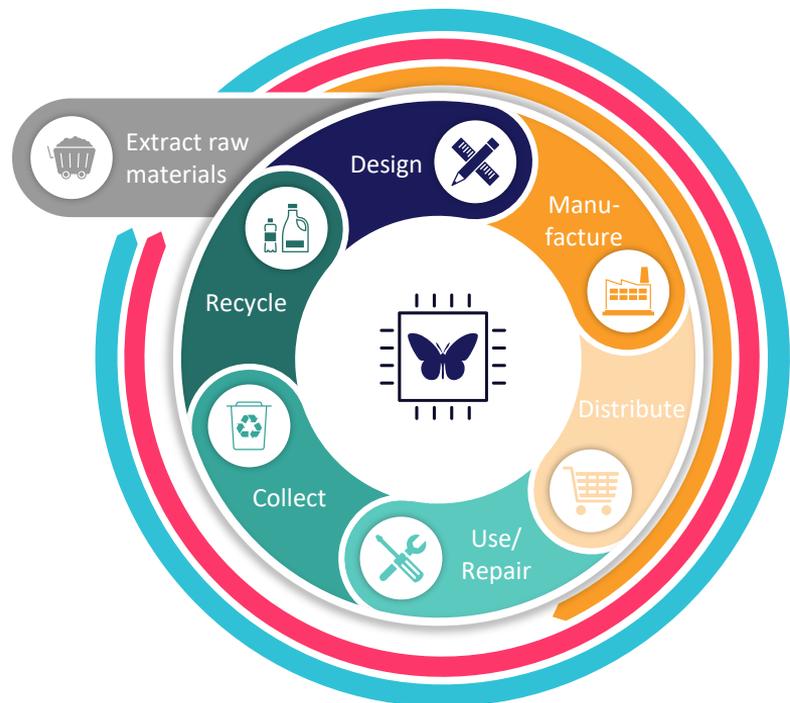
- The DPP is latest required to be created **upon market entry of the product** into the EU market
- A DPP could be created at any step between **raw materials** and **distribution**
- The earlier the DPP is created, the easier the data collection along the following product lifecycle steps

Data collection

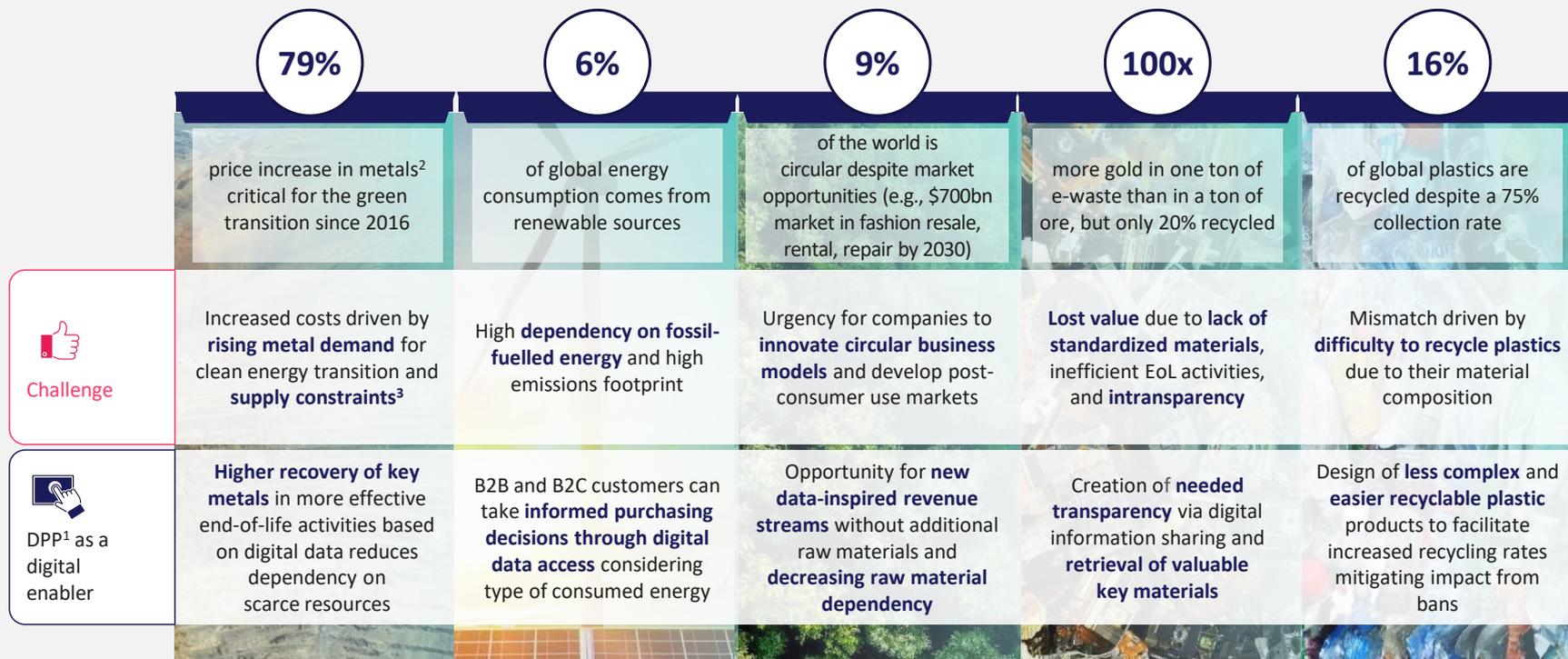
- Detailed DPP data may need to be **collected across the product lifecycle to create the DPP**
- To make DPP data collection easier across the entire VC, DPP could already be created before entry into EU market

DPP access

- In the lifecycle stages following DPP creation actors should be able to **enter data directly into DPP** to facilitate data sharing



There are many urgent issues the EU wants to solve and the DPP as a digital enabler could help to tackle those

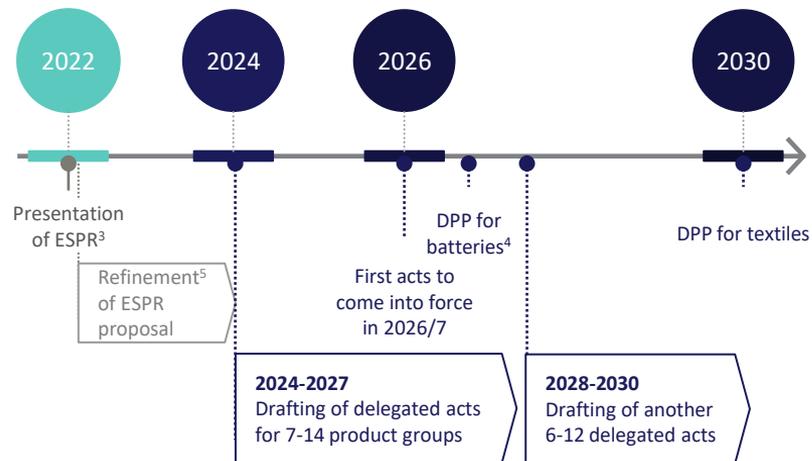


DPP requirements will affect prioritized industries first ...



[See separate publication for more details on policy perspective and key uncertainties](#)

... but timeline currently remains unclear



Main timeline uncertainties

- Specific timings and roadmaps for single product groups (e.g., deadlines for input submission)
- Timings and format of stakeholder consultations
- Timeframe between final approval and effective enforcement (e.g., could be 1 year)

Many aspects of DPP regulation still uncertain, impacting current corporate preparations

	Regulatory elements	Defined	Uncertain	Implications for companies
Scope	1 Product groups	8 prioritized industries, some excluded industries	<ul style="list-style-type: none"> Prioritization of not mentioned yet industries Priority product groups within industries 	All industries can start DPP preparations , most importantly companies in prioritized industries
	2 Company size	All company sizes to be affected	<ul style="list-style-type: none"> Differentiation of detailed requirements Detailed support mechanisms for SMEs 	All companies need to act now and collaborate across VCs to prepare for the DPP implementation
	3 Application level	DPPs at item, batch or product model level	<ul style="list-style-type: none"> Preferred application level Scope and definition of different levels 	Companies need to be able to adjust the level of data collection based on upcoming decision on application level per product group
Tech	4 Data storage	EU registry for storing UPIs ¹ ; companies responsible for storing detailed DPP data	<ul style="list-style-type: none"> Tech options and interoperability Division of responsibilities between stakeholders 	Opportunity to assess different technology options together with industry and VC partners, considering that EU will be technology-neutral but will establish common rules to ensure interoperability (rules not yet decided)
	5 Data carrier	Shall be ISO-/IEC-compliant and specified by product group	<ul style="list-style-type: none"> Data carrier format Degree of standardization between product groups 	Need for status quo assessment of corporate data security and privacy mechanisms to prepare for mandatory disclosures
	6 Access/security	Different access restrictions per stakeholder group	<ul style="list-style-type: none"> Access levels for diff. stakeholder groups Details on data security and privacy 	Opportunity to take existing reporting standards and regulations (incl. eco-design regulations) as guidance for data collection but need for flexibility in measurement scopes (e.g., report on item level)
Data	7 Data requirements	Differ by product group, currently long list of potential topics	<ul style="list-style-type: none"> Clear definitions of data requirements 	Need for status quo assessment of IT infrastructure, data availability, and data quality
	8 Governance	Data provision/update by economic operator placing product on EU market	<ul style="list-style-type: none"> Protection against data manipulation Data verification (e.g., assurance) 	

Read more on How and why to engage on mandated vs. recommended topics **in Action 1 on page 15**



Degree of definition in EC proposal²



Mandate by EC



Recommendation/conditions by EC



See separate publication for more details on policy perspective

Companies face DPP regulation and rising number of urgent issues



DPP is on the horizon, with global implications

- Final approval of ESPR, which regulates DPP, expected in next 2-3 years
- Specific requirements for majority of product groups by 2030
- First regulation of this kind with significant impact on global VCs
- Potential trigger for other international regulators



Companies currently confronted with several urgent issues

- Economic pressures (e.g., price increases driven by resource scarcity)
- Environmental problems (e.g., increasing and poorly managed waste streams)
- Sustainability reporting issues (e.g., metric and measurement challenges)

Acting now creates a window of opportunity for companies to mitigate impact of issues and reduce future risks



Influence regulation



Improve compliance & resilience



Unlock investment synergies



Increase transparency

Companies can unlock benefits by preparing for DPP implementation early

 <p>Influence regulation</p>	<ul style="list-style-type: none"> • Provide corporate perspective and shape policy discussions, particularly on currently uncertain elements in DPP regulation • Reduce risk of unexpected and undesired outcomes that can adversely impact business and operations
 <p>Improve compliance & resilience</p>	<ul style="list-style-type: none"> • Anticipate and flexibly adapt to changes in regulatory requirements allowing to prepare early and ensure compliance • Manage risks related to supply shocks and price volatilities for scarce resources due to higher data-enabled transparency on critical raw material use and product design
 <p>Unlock investment synergies</p>	<ul style="list-style-type: none"> • Optimize resource and budget allocation to avoid sunk costs from misaligned ESG-related investment decisions, e.g., <ul style="list-style-type: none"> – Avoid future IT costs, duplication in data collection efforts, and extensive process redesign by anticipating DPP requirements in tech and data infrastructure and investment
 <p>Increase transparency</p>	<ul style="list-style-type: none"> • Leverage DPP data and increased VC collaboration to inform life cycle assessments • Empower environmentally-conscious decision-making by providing data insight (e.g., design) • Unlock data-driven efficiency improvements in operations and across entire VC (e.g., calibrate and optimize procurement processes to DPP requirements and broader ESG reporting)



Opportunity for companies to prepare for digital DPP implementation early without risking overinvestment and myopic decision-making

Cautious planning and taking early, non-regret actions is key

Companies can already start preparing for a DPP launch with 4 key actions



Engage in shaping the regulation

Contribute to shaping the DPP regulation¹ directly (e.g., product groups prioritization, data management) and through collaboration across the VC (e.g., setting industry standards)



Assess data availability and fill in the gaps

Determine what product data can already be retrieved from your current reports, identify and gather missing product data



Enable own organization

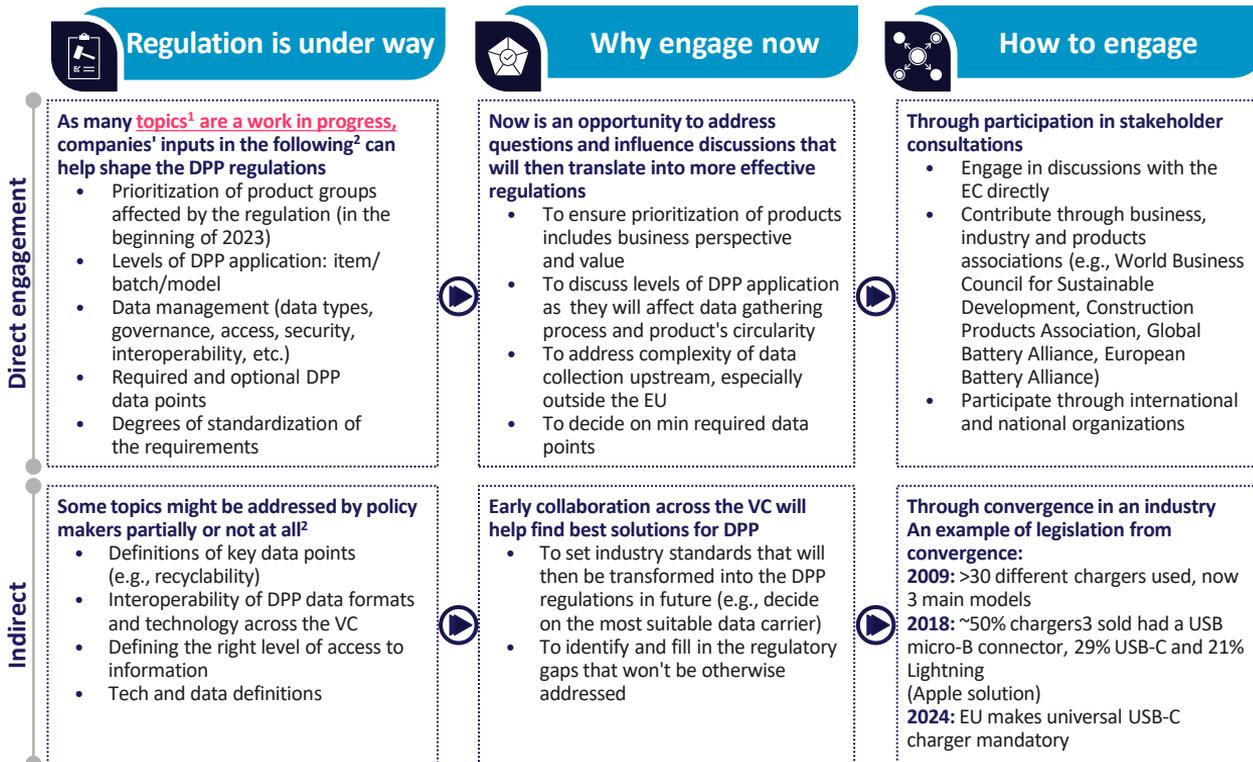
Ensure all relevant teams (procurement, production, IT, marketing, etc.) are informed and involved in the coming DPP changes



Plan for changes in technology

Check company's tech readiness for the DPP and plan for the changes needed in future, ensuring interoperability of IT systems inside the organization, storing data centrally, and aligning across the VC

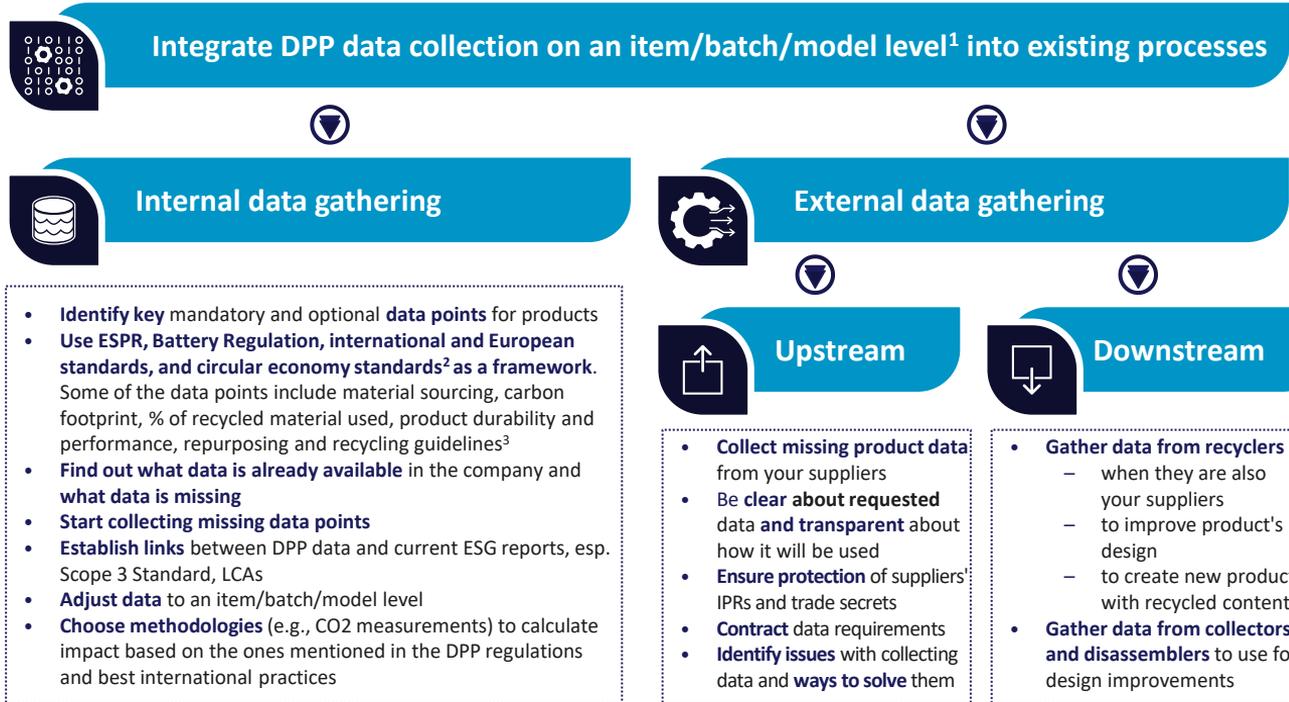
Action 1 | Engage in shaping DPP regulations and standards



How to get started

- Engage in WBCSD DPP initiatives**, e.g., to contribute to policy recommendation development
- Monitor DPP's regulatory development** (e.g., updates, calls for input)
- Identify key topics** (see [open topics](#)) you want to get involved in during regulatory development (e.g., where DPP should be created) and **solutions to support**

Action 2 | Assess current product data availability, identify gaps and gather missing data

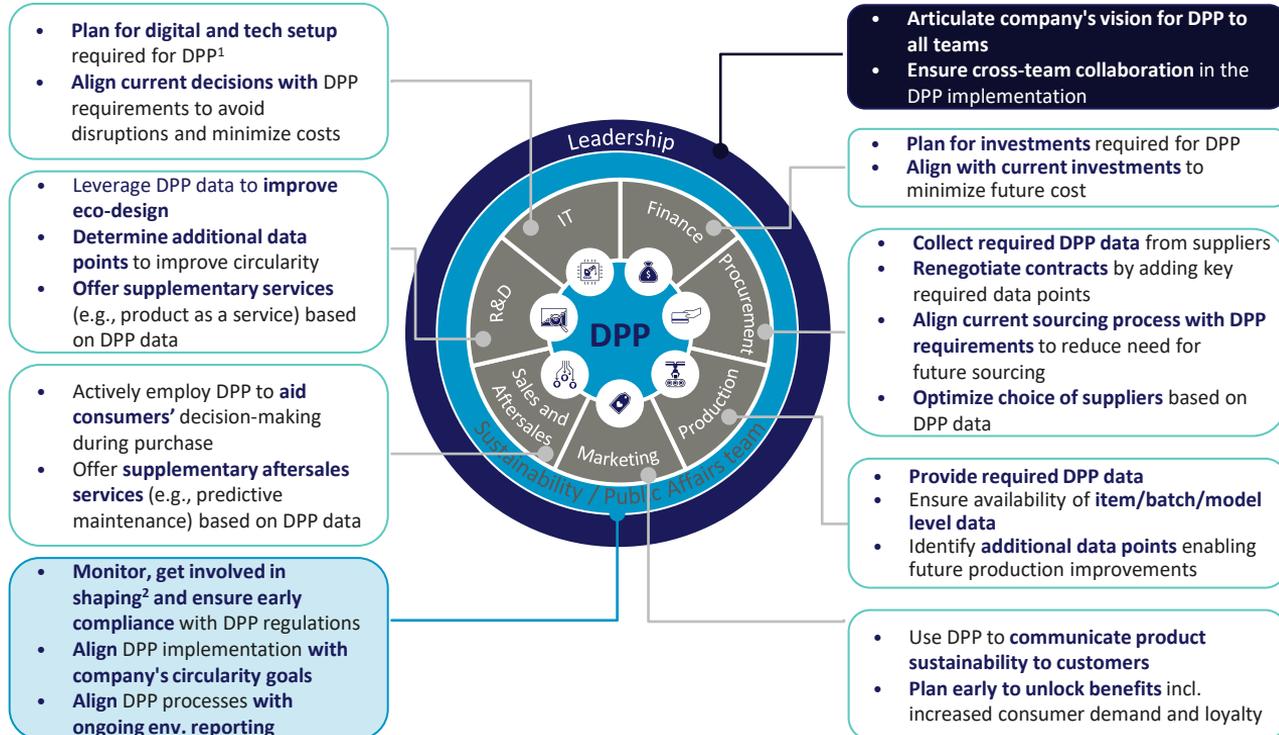


How to get started

1. **Map** current and upcoming national and EU **regulations** and global standards to **identify key data points likely to be included in DPP** (for an example of key data points, please reach out to a BCG contact listed on page 22)
2. **Map existing data points** in your company and identify **where data is insufficient** to meet the above identified expectations
3. **Include** key data points **into procurement processes** to gather relevant upstream data (e.g., contracts, SCoC, audits, ...)

Action 3 | Inform and involve all relevant internal teams in the DPP implementation

Some activities can be started today, whereas other roles of functions depend on further detail from the DPP regulation



START

How to get started

1. Assign a designated DPP responsible to translate new regulatory developments into implications/actions

2. Share information about DPPs with your organization (e.g. distribute [these materials](#), organize workshops, etc.)

3. Identify impact of DPP on each **function** (e.g., how DPP will affect products planned to be launched) and support current (investment) decisions to ensure future synergies

Action 4 | Plan for changes in technology and interoperability with current systems

	1. Data storage	2. Data carrier	3. Data types	4. Data access & security	6. Data integration & interoperability	5. Data quality
Reg. outlook	Provision of guidelines, recommendation of a specific technology is unlikely	QR code is a chosen carrier for batteries and is likely to be recommended for other product groups	General guidance is provided. Product-related specifications reg. types of data may follow	Differentiated access is proposed , so that each stakeholder reads info that is relevant to them	Interoperability is required on all levels	Reliability and integrity of the information are required
Actions	<p>Choose a DPP data storage option:</p> <ul style="list-style-type: none"> Cloud On-premises Blockchain storage <p>(note: one blockchain has to be chosen by all key actors across the VC)</p> <p>Decide whether to build yourself or buy solutions designed by third parties</p>	<p>Choose a data carrier¹:</p> <ul style="list-style-type: none"> QR code Barcode RFID Watermark NFC Bluetooth tags 	<p>Structure data with an ontology of metadata² to have automated search and processing</p> <p>Ensure that both static and dynamic³ data can be added</p>	<p>Provide differentiated access to the product data for confidentiality and improved user experience</p> <p>Ensure data safety and compliance with the regulations</p>	<p>Move the product data to the right places in the right time and right way</p> <p>Establish interoperability with existing reporting system(s)</p> <p>Ensure data is easily transmissible along the VC</p>	<p>Ensure that the product data is consistent, coherent, timely, accurate and unambiguous</p>



See our separate publication for more details on policy perspective and assessment of data and tech options



How to get started

- Collaborate with actors across VC and industry organizations on tech topics** to identify preferred internal and systemic solutions (e.g., unified platform creation for the VC)
- Inform IT & Finance** about DPP to already include its implications in related tech decisions
- Map in which systems expected DPP data is located** in the organization and ensure easy, central access to key data points, if not yet available

DPP implementation is not without challenges ...



Enabling transparency while maintaining confidentiality ...

- **Protection of IPRs** and commercially sensitive information
- **Sharing enough information** to improve circularity of products



Ensuring interoperability ...

- **Data interoperability** with ESG reports, standards and certifications (high risk of overlapping reporting practices, EU and international)
- **Technical interoperability** with internal and external IT systems (incl. implementation of the DPP tech across the VC)



Collaborating across the value chain ...

- **With suppliers outside the EU** (renegotiating contracts, collecting data, etc.)
- **With new actors** with whom there was no previous collaboration (e.g., suppliers and recyclers)



Dealing with uncertainties of the DPP regulations...

- **What, why and how to report**, incl. for players active in several VCs
- **Who and how owns and manages** the data across the VC
- **DPP application level** (complexity depends on the required level: an item/batch/model)
- **DPP implementation for complex products** with many components (potential consolidation of several DPPs into one)

... but they can be mitigated when addressed early



... by leveraging existing tech solutions

- **Differentiated levels of access** to DPP data to various parties
- **Improved security of data**



... through early alignment inside and outside a company

Reg. the **unified and coherent methods** of data collection, format and calculation, organizing data processes **“under one roof”**

- Reg. the adjustments or transformations of systems according to the regulations¹ but ensuring that changes made **work together with gov. systems and along the VC**



... by improving existing communication, providing support to partners and building new connections

- Support will be necessary, especially for SMEs in- and outside the EU
- Connection to players along the VC to better understand your product



... while focusing on the main purpose of the DPP

- Companies can engage in and contribute to discussions with the EC²
- Fill in the gaps working together with other industry players, uniting around the common goal of improved transparency and traceability for circularity

DPP could provide sustainable growth opportunities for companies

Advantages for sustainable companies

“DPP will provide an opportunity to communicate clearly about sustainability features of our products”¹

First-mover advantage, when moving ahead of the legislation

Price premium and better product positioning

Customer loyalty gained through enhanced communication, engagement and transparency

Productivity of resources

Improved quality and lower price of recycled materials

Ability to choose more sustainable inputs for products **and track** their performance during the whole lifecycle

Less product returns, improved product quality & safety through data-driven and collaborative quality control management

Improved forecasting about the use of resources

Value creation from data transparency

Informed decision-making about product improvements thanks to new data available through DPP (potential to improve design for reparability, reusability, recyclability, etc.)

Potential to create new products and provide additional services based on new data and improved connections across the VC

Despite some challenges, uncertainties and a lengthy timeline, companies benefit from preparing for DPP implementation now

Being an early adopter, even moving ahead of the DPP regulations, **can mitigate risks and unlock growth opportunities**

A range of actions are no-regret moves and will help navigate the uncertainties:

- 1 **Engage in shaping regulations**—participate in stakeholder consultations or collaborate across the value chain to set industry standards
- 2 **Assess your product data** availability and **start collecting data**, filling in the data gaps
- 3 **Ensure all relevant teams are informed and involved** in the DPP implementation
- 4 **Plan for technological changes**, focusing on interoperability with current systems

For further actions on DPP reach out to WBCSD & BCG

Engage us on these or other questions related to the EU DPP

- How can WBCSD and BCG support your company in preparing for the EU DPP?
- How can we best collaborate in building cross value chain coalitions, setting standards, developing data sharing protocols, ...?
- Which regulatory set-up should we position as desirable towards the EC across scope, tech and data topics?



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Explore additional resources



A "Paris Agreement" for recycling the Earth's resources



Circular Transition Indicators v3.0 – metrics for business, by business



Electronics industry aligns behind a shared vision to accelerate the transition to circularity

Driving insights through collaboration

The WBCSD and BCG want to thank the authors and contributors involved in the creation of this publication for their extensive contributions

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Disclaimer

This publication is the result of a collaboration by WBCSD stakeholders, BCG experts and external contributors. The intention of this set of publications is to educate about the upcoming EU DPP regulation, highlighting current uncertainties incl. what aspects can still be impacted and outlining key immediate actions for companies to prepare. A range of stakeholders were interviewed and reviewed drafts. Input and feedback from stakeholders listed above were incorporated in a balanced way. This does not mean, however, that every stakeholder agrees with every view. This is best knowledge as of December 2022 but changes to DPP topics can occur quickly.

About the World Business Council for Sustainable Development (WBCSD)

WBCSD is the premier global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net zero, nature positive, and more equitable future.

We do this by engaging executives and sustainability leaders from business and elsewhere to share practical insights on the obstacles and opportunities we currently face in tackling the integrated climate, nature and inequality sustainability challenge; by co-developing “how-to” CEO-guides from these insights; by providing science-based target guidance including standards and protocols; and by developing tools and platforms to help leading businesses in sustainability drive integrated actions to tackle climate, nature and inequality challenges across sectors and geographical regions.

Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD \$8.5 trillion and 19 million employees. Our global network of almost 70 national business councils gives our members unparalleled reach across the globe. Since 1995, WBCSD has been uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues.

Together, we are the leading voice of business for sustainability, united by our vision of a world in which 9+ billion people are living well, within planetary boundaries, by mid-century.

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