Open Data Maturity

Policy

2024
Open Data Maturity Report

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European Commission

Directorate-General for Communications Networks, Content and Technology
Unit G.1 – Data Policy and Innovation
Email: CNECT-G1@ec.europa.eu

data.europa.eu
Email: info@data.europa.eu

Authors – Capgemini Invent
Martin Page PhD
Arman Behrooz
Maddalena Moro

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Chapter 4: Open data policy

Over the years, the EU has developed a comprehensive policy framework to accelerate the opening of data held by the public sector, namely to enhance its accessibility and usability for citizens, businesses and researchers. The open data directive (Directive (EU) 2019/1024) is the most recent framework for open data policy in the EU. The directive, which had to be transposed into EU Member States' national laws by July 2021, aims to enhance the openness and utility of public sector data through requirements such as:

- stimulating the publishing of dynamic data and the uptake of application programming interfaces (APIs);
- limiting the exceptions under which public bodies may charge more than the marginal costs of dissemination for the reuse of their data;
- strengthening the transparency requirements for public–private agreements involving public sector information;

The directive applies to a wide range of information (e.g. written texts, databases and audio files) held by Member States' public sector bodies, public authorities, publicly owned companies and publicly funded research initiatives.

The directive also introduced the concept of high-value datasets (HVDs), which are public datasets associated with important socioeconomic benefits for society, the environment and the economy. The related implementing regulation (Commission Implementing Regulation (EU) 2023/138) sets out rules to ensure that certain datasets included in the thematic categories defined in the regulation are made available free of charge, in machine-readable formats, through APIs and, where relevant, as a bulk download.

The **policy** dimension of the open data maturity (ODM) assessment is designed to encourage the practical implementation of policy measures. Governance structures, operating models, processes and activities are needed to realise the ambitions outlined in policies and strategies.

In brief, the **policy** dimension investigates countries' policies and strategies regarding open data, the national governance models for managing open data and the measures deployed to implement the policies and strategies. Table 1 summarises the key elements of the policy dimension.

Table 1: Indicators of the policy dimension

Indicator	Key elements
Policy framework	An open data policy and strategy are in place at the national level to provide a long-term strategic vision and action plan for open data. The strategies incentivise open data reuse in both the public and private sectors and access to real-time, geospatial and citizen-generated data. Activities regarding HVDs are in place.
Governance of open data	Governance models and regular coordination activities across public sector bodies are in place to ensure open data publication at all government levels and to support local and regional open data initiatives. Regular exchanges occur between open data providers and reusers from academia, businesses and other non-governmental organisations.
Open data implementation	Data publication plans and implementing processes exist. The number of public bodies that charge above the marginal costs of dissemination for the reuse of their open data is monitored. Training activities for civil servants working with data are organised, as are society-wide open data literacy initiatives.

This chapter will first present overall performance on the policy dimension and then provide a summary of the results and best practices for each indicator.

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4.1. Overall performance on the policy dimension

According to the EU-27 average in 2024, the policy dimension remains the most mature dimension of the ODM assessment, scoring 9 percentage points (pp) higher than the second-ranked portal dimension. The average maturity of Member States in the policy dimension in 2024 is 91 % (Figure 1). This represents a 2 pp increase from 2023, marking the first time that the maturity score for this dimension has surpassed 90 %. This increase has primarily been driven by the 4 pp rise in the 'open data implementation' indicator, which showed the largest growth among the three policy indicators, reaching 92 %. The 'policy framework' indicator also increased (+ 2 pp), reaching 90 % maturity (Figure 1).

In terms of individual country performance, **Estonia** (100 %), **France** (100 %), **Italy** (100 %), **Poland** (100 %) and **Ukraine** (100 %) are tied for first place in this dimension (Figure 2). **Czechia** (99.2 %), **Ireland** (99.2 %) and **Cyprus** (99.2 %) are a close second, all scoring full points on the 'policy framework' indicator. **Cyprus** scored full points on the 'governance of open data' indicator, and **Czechia** and **Ireland** scored full points on the 'open data implementation' indicator. Overall, 16 Member States scored above the EU-27 average of 91 %.

Highlight from Estonia – training programmes for civil servants' data competencies

An important practice observed as part of this year's report is that countries are creating structured training programmes to develop their civil servants' data competencies.

One notable example is **Estonia**, which is implementing a comprehensive strategy for strengthening the data skills of its civil servants and ensuring effective data management and open data practices across the public sector.

In 2024, Estonia aimed to train over 2 500 data specialists across 10 targeted training sessions and between one and four online courses. This training aimed to cover key areas such as data quality and open data publication, contributing to improved national open data standards. Already, open data licensing training by Creative Commons and a data working group webinar have been held.

Estonia has also introduced detailed competency profiles for data engineers and analysts and is currently developing a profile for data stewards. These profiles serve as the foundation for nationwide training programmes and provide input for higher education curricula, ensuring future civil servants are equipped with relevant skills.

This best practice contributes to Estonia's excellence across all three policy dimension indicators, particularly in the 'open data implementation' indicator. **Read more about this trend in Section 4.3.**

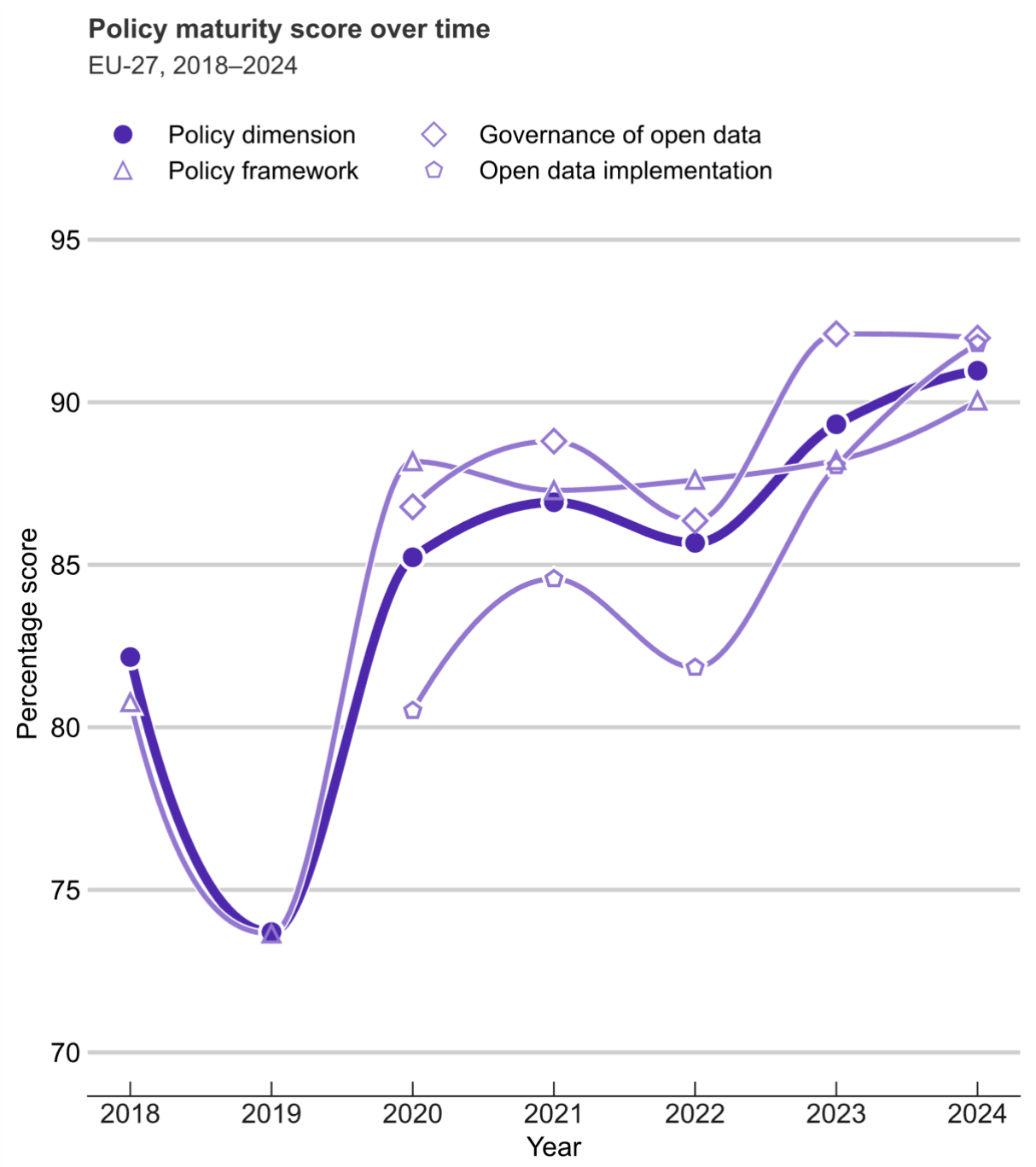

Figure 1: The EU-27 average score on the policy dimension has risen steadily over the past three years (2022–2024)

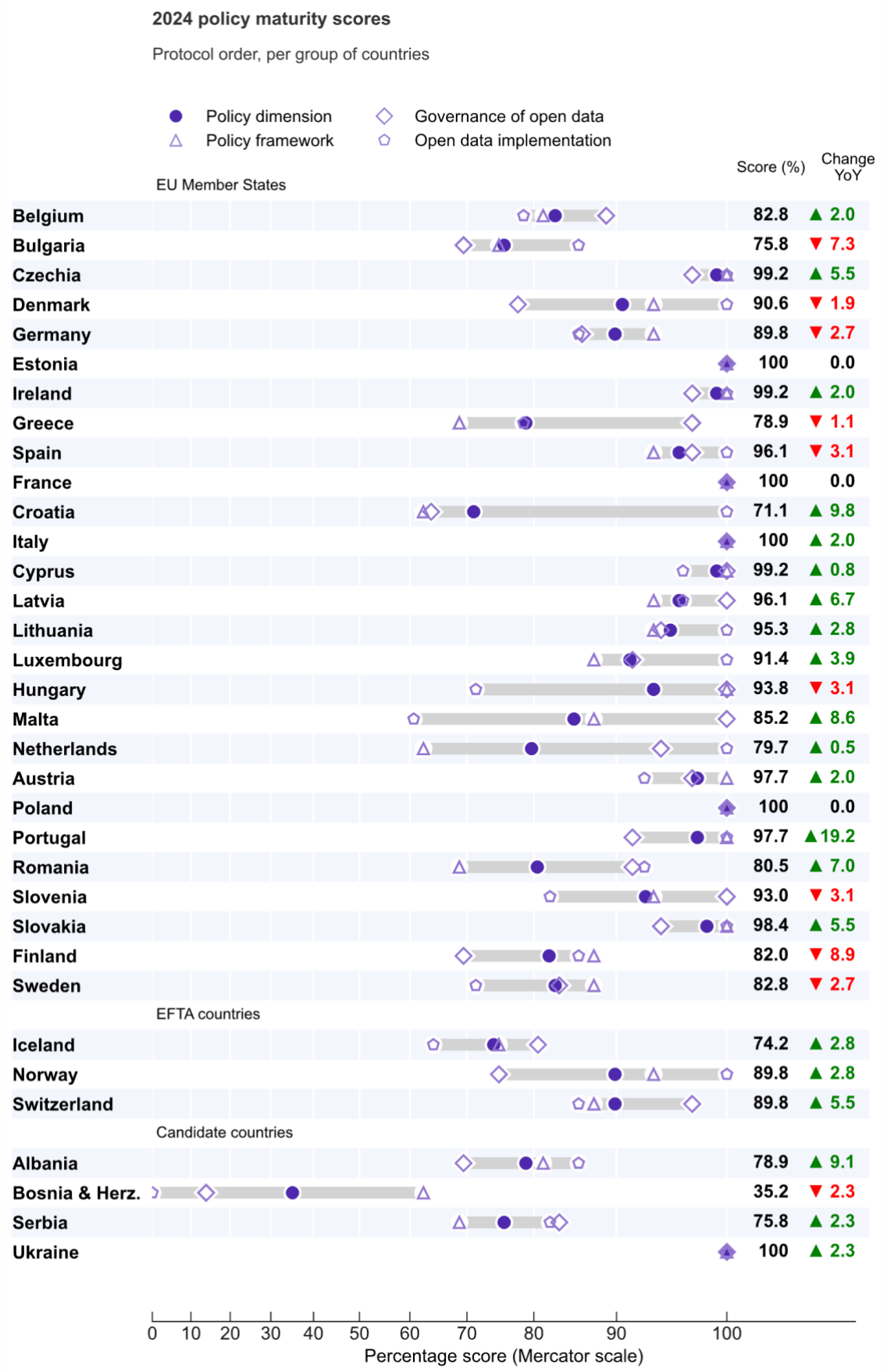

Figure 2: Twenty participating countries improved their score on the policy dimension in 2024. (EFTA: European Free Trade Association; YoY: year-on-year).

Portugal (+ 19 pp), **Croatia** (+ 10 pp) and **Albania** (+ 9 pp) showed the greatest year-on-year improvement in the policy dimension. **Portugal's** increased score can be attributed to its significant progress across all three indicators. Namely, it achieved the second-highest improvement in the 'policy framework' indicator, which can be attributed to its recent addition of an open data strategy and its open data policies outlining measures to incentivise the publication of and access to citizen-generated data, fostering the discoverability of open data on data.europa.eu and outlining measures to support the reuse of open data by the private sector. Portugal also achieved the second-highest increase in the 'open data implementation' indicator, which can be attributed to the recent addition of its governance structure ensuring the facilitation of local and regional open data initiatives at the national level and a publicly accessible document outlining their country's open data governance structures. Finally, Portugal achieved the greatest improvement in the 'governance of open data' indicator, which can be attributed to its recent addition of having publication plans for open data at the public body level and processes for ensuring that its open data policies and strategy are implemented.

Highlight from Portugal – sector-specific citizen-driven data initiatives

One of the trends highlighted in this year's report is the inclusion of sector-specific initiatives in national policies and strategies aimed at promoting citizen-generated data.

For example, **Portugal** has outlined key measures to ensure open data and data reuse in its transversal action plan for public administration digital transformation (part of the broader strategy for public administration digital transformation for 2021–2026). A central priority is establishing and maintaining an open data ecosystem that actively engages multiple stakeholders. Portugal promotes this initiative, in part, through citizen science projects that encourage public participation and collaboration in the open data space. In the field of marine biology, several entities in Portugal, both governmental and non-governmental, including non-profit organisations, collaborate with public bodies to actively involve citizens in data-generation efforts.

A notable example is the Algarve Centre of Marine Sciences (CCMAR), one of Portugal's leading marine research centres, which collaborates closely with the public Portuguese Institute for Sea and Atmosphere (IPMA). The Algarve Centre of Marine Sciences encourages citizens to contribute to marine conservation efforts. For example, the New Marine Species of the Algarve (NEMA) project invites citizens to report sightings of non-native marine species in the Algarve. At the same time, the Algarve Stranding Network (RAAIg) gathers public reports of stranded marine animals, such as dolphins and turtles, to monitor marine health. Citizens are also encouraged to report algal blooms, which can indicate ecological disturbances, and to document benthic species for the Marine Forests project via platforms like iNaturalist. Additionally, the Biomares programme fosters community involvement by inviting public observations of marine life in the Professor Luiz Saldanha Marine Park, promoting biodiversity conservation efforts.

Read more about this trend in Section 4.2.

Croatia's increased score on the policy dimension can be attributed to its 19 pp increase in the 'policy framework' indicator, which was the highest increase among all countries, as well as its reporting of a regular exchange of knowledge and experiences between its national open data team and the wider network of open data officers. **Albania's** increased score on the policy dimension can be attributed to its 27 pp increase in the 'open data implementation' indicator, which was the second-highest increase among all countries, as well as its recent addition of measures for supporting the reuse of open data by the public sector in its national policies/strategy.

Highlight from Croatia – Working Group for the Coordination of State Information Infrastructure Projects and Digital Transformation
Establishing working groups is a particularly common method that countries use to facilitate exchanges between the national open data team and the wider network of open data officers. For example, **Croatia** fosters collaboration across government bodies through the Working Group for the Coordination of State Information Infrastructure Projects and Digital Transformation. This group, which includes representatives of various governmental entities responsible for digitalisation such as the open data team and open data officers, meets regularly to discuss updates and share progress on digital transformation initiatives. **Read more about this trend in Section 4.2.**

Ten countries' scores on the policy dimension decreased year-on-year. In general, such decreases may have been influenced by new questions in the survey that asked for further details about governance structures and by the updating of policies and strategies compared with the previous year.

4.2. Policy framework

The 'policy framework' indicator evaluates open data policies, strategies and action plans at the national, regional and local levels. Specifically, this indicator investigates whether concrete mechanisms are in place to support the publication of, access to, discoverability of and reuse of several data types, including real-time, geospatial and citizen-generated data.

Open data policies and strategies

National open data policies are formalised rules and guidelines that govern open data within a country. In the case of Member States, national policies should include legislative measures to comply with the open data directive, ensuring the reuse of public sector information and promoting interoperability and fair access to open data across the EU. On the other hand, open data strategies are principles and goals that countries want to achieve in the field of open data based on their open data policies. Furthermore, regional and local policies and strategies play a crucial role in promoting open data initiatives that reflect local priorities. In addition, they are often effective in addressing the unique barriers to open data publication and reuse faced by subnational governments and their constituents. These subnational initiatives can complement national policies, focusing on the implementation and execution of open data practices tailored to regional governance structures. Table 2 presents an overview of how countries responded to the questions on this topic.

Table 2: Countries' responses to questions on open data policies and strategies

	Is there a national open data policy?	*Is there a national open data strategy?*	*Is there an open data policy/strategy at the regional or local level?*
EU-27	All 27 (100 %) Member States report having an open data policy.	26 Member States (96 %) report having a stand-alone national open data strategy or relevant open data-related objectives, actions and timelines incorporated within broader national policies. **Portugal** is a recent addition to the group. **Romania** did not report having an open-data strategy.	20 Member States (74 %) report having an open data policy/strategy at the regional or local level. Four Member States (14 %) responded 'not applicable' due to the specific governance structures in place (e.g. having a small country size).
EFTA	All three participating EFTA countries report having an open data policy.	**Norway** and **Switzerland** report having a national open data strategy, while **Iceland** reports that relevant open-data-related objectives are incorporated within its broader national policies.	**Iceland** and **Switzerland** report having an open data policy/strategy at the regional or local level. **Norway** responded 'not applicable', as its national strategy is developed in collaboration with relevant local and regional authorities.
Candidate	All four participating candidate countries report having an open data policy.	**Albania** and **Ukraine** report having a national open data strategy, while **Serbia** reports that relevant open-data-related objectives are incorporated within its broader national policies.	**Serbia** and **Ukraine** report having an open data policy/strategy at the regional or local level.

(Questions P1, P2 and P3)

Almost all participating countries have either a dedicated national open data policy or a national framework addressing data, digitalisation, artificial intelligence (AI), e-government or similar areas that explicitly incorporates open data within its text and scope. In particular, all Member States have implemented the open data directive, either as stand-alone policies (e.g. the **Netherlands's** Law on the Reuse of Public Information) or as amendments to existing laws (e.g. **Croatia's** amendment of its Free Access to Information Act No 106/1999 Col.).

Several countries take a broader approach by incorporating open data provisions within wider legislative frameworks on data and digital transformation. For example, **Bulgaria** has integrated its open data initiatives into a comprehensive legal framework through the Access to Public Information Act, which aims to enhance transparency and accessibility across the public sector. This trend extends

beyond the Member States, with countries such as **Serbia** also incorporating open data policies into their broader digital governance strategies through legislation (the Law on Electronic Government).

A similar trend is seen in open data strategies. Although several countries develop specific strategies in line with their commitment to their open data policies, several do this as part of broader plans. For example, **Denmark** notes that its national open data strategy is to be expressed through one of seven themes making up its comprehensive *National Strategy for Digitisation* (2024–2027). This is seen at both the national and the regional/local level, such as strategies relating to general development, as seen in Ponferrada (**Spain**) and Reykjavik (**Iceland**); smart cities, exemplified by Budapest (**Hungary**), Prague (**Czechia**) and Priboj (**Serbia**); or general digitalisation of government, such as in Utrecht (**Netherlands**), Helsinki (**Finland**) and Geneva (**Switzerland**).

Most national open data policies commit to making public sector data openly available by default. This trend is then reflected in the goals and principles outlined in many national open data strategies. Often, in cases such as **Cyprus**, **Czechia**, **France**, **Ireland**, **Lithuania**, **Slovenia**, **Sweden** and **Ukraine**, this is established through public information laws legally mandating citizens' rights to request and obtain data. This 'open by default' principle is also frequently cited in national strategies. Namely, strategies in **Austria**, **Czechia**, **Germany**, **Ireland**, **Norway**, **Slovenia** and **Ukraine** explicitly advocate for treating official documents as public resources that should be readily available to citizens (with exceptions for restricted data) when outlining priorities and objectives.

National policies also often cite the promotion of innovation as a driver for implementing open data legislation (e.g. in **Albania**, **Finland**, **Lithuania**, **Slovenia** and **Sweden**). These policies emphasise that greater access to data can help stimulate research, improve public services and facilitate the development of data-driven solutions across various sectors.

Many national open strategies share the following key themes.

1. **Collaboration with stakeholders**

One frequently cited aspect of national strategies is engaging citizens more. There tends to be a focus on engaging the public and raising awareness about the importance and benefits of open data, often involving educational initiatives and participatory platforms. For example, **Switzerland** emphasises the importance of involving the public and stakeholders in implementing its open government data (OGD) master plan, including fostering transparency and data accessibility. **Slovenia's** strategy includes specific plans to raise public awareness and enhance digital skills, recognising that informed citizens are crucial for utilising open data effectively. **Lithuania** aims to promote open data literacy among the public, focusing on education and engagement to ensure citizens understand open data's benefits.

Establishing a 'data ecosystem' is another recurring theme, which involves engaging groups of stakeholders beyond individual citizens. The national strategies of **Norway** and **Slovenia**, for example, use the term data ecosystem when outlining objectives for fostering digital collaborations between data providers, analysts and developers with a common set of information technology solutions to enhance data quality. On the other hand, **Spain** and **Portugal** mention data ecosystems in the context of intending to generate connections between the actors of the national and international open data ecosystems (e.g. European data system), ensuring an alignment with standards of data and enhancing opportunities for innovation.

2. Sector-specific data

Another common theme across both national and regional/local strategies is the emphasis on specific sectors and the creation of targeted datasets tailored to the needs of particular stakeholders. This trend is most prominent at the national level in terms of reuse and API access to geospatial data. The infrastructure for spatial information in Europe (Inspire) directive (Directive 2007/2/EC), an EU initiative, plays a central role in establishing a spatial data infrastructure to support environmental policies and activities. This directive ensures that spatial datasets, such as maps and geographical information, are accessible via network services. Countries such as **Italy**, **Norway** and **Slovenia** have highlighted access to and the promotion of geospatial data reuse as key priorities in their national strategies.

This trend is also observed at the regional level. For example, **Prague's** 2030 strategy outlines plans to promote open data to leverage it for innovations by public and private sector organisations in sectors like mobility, energy and tourism. Furthermore, the municipality of Cēsu's (**Latvia**) strategic plan for data outlines its objective of publishing open data, mentioning that the private sector reuse of data from the health, transport and environment sectors can enable innovations for public benefit.

3. Ethical guidelines and other protections

Open data policies, such as those from **Albania**, **Finland**, **Ireland**, **Lithuania** and **Ukraine**, emphasise the importance of privacy and data protection within the context of their open data policies. The policies often note that safeguarding sensitive and personal information, as well as the overall privacy rights of citizens, is a fundamental right to balance with the aim of promoting transparency and open public data. The development of legal frameworks and ethical guidelines to govern the use of open data is also reflected in many national open data strategies.

Open data action plans

An open data action plan typically outlines the specific measures and steps that need to be implemented to achieve the goals set by the national open data strategy or policy. It includes detailed actions, timelines and the responsible parties for carrying out these measures. Countries frequently use their action plans to enhance data publication, ensure quality, improve accessibility and promote reuse while also incorporating innovative aspects, for example emerging technologies such as AI. Table 3 presents an overview of how countries responded to the question on this topic.

Table 3: Countries' responses to the question on open data action plans

	Does the national strategy/policy include an action plan with measures to be implemented in the open data field?
EU-27	25 Member States (92 %), **all except Croatia** and **Romania**, report that their national strategy/policy includes an action plan with measures to be implemented in the open data field.
EFTA	**Iceland**, **Norway** and **Switzerland** report that their national strategy/policy includes an action plan with measures to be implemented in the open data field.
Candidate	All four participating candidate countries report that their national strategy/policy includes an action plan with measures to be implemented in the open data field.

(Question P4)

The most common element of action plans is a strong focus on publishing more open data, ensuring that data is accessible, reusable and regularly updated. Several countries also emphasise the importance of maintaining high-quality standards for open datasets and their corresponding metadata. **Czechia**, **Ireland** and **Slovakia** highlight that prioritising the publication of HVDs is a key part of their action plans. **Czechia** and **Luxembourg** also highlight action points for enhancing data accessibility by ensuring interoperability between systems.

Some countries also emphasise the importance of monitoring the usage and impact of open data and of providing public dashboards and reports on the effectiveness of their open data policies. For example, **France** and **Iceland** require each ministry or public body to set up data roadmaps and timed plans for data disclosure. **Czechia**, **Germany**, **Luxembourg** and **Poland** undertake regular reporting and progress monitoring and emphasise that these are key components of their open data, with **Luxembourg** even publishing the results of its monitoring via a public dashboard. Similarly, **Ireland** and **Spain** place emphasis on tracking the impact and quality of open data usage in their countries, with **Spain** publishing Microsoft Power BI reports on the activity of its national open data platform and its national open data catalogue, while **Ireland** provides insight reports into how open data is being used.

Several action plans have points regarding data reuse, helping users derive insights from open data. Namely, **Ireland** plans to create data visualisation capability in its national open data portal, and **Malta** has measures to improve the readability of open data. In addition, **Spain's** action plan includes presenting research studies on its portal website, which provides a step-by-step account of how to perform analyses and create visualisations using open data, outlining which analytical tools to use.

Many countries also include innovative action points in their plans. Specifically, **Luxembourg** wants to collaborate with its AI4Gov programme to foster the availability of open datasets that can be used for AI. **Norway** outlines actions such as developing a strategy for AI and establishing a national toolbox for data sharing. Additionally, **Spain** has action points for improving its national open data portal by incorporating capabilities relating to data spaces, further aligning with EU data rules.

Highlight from Spain – promoting open data through social media

As part of **Spain's** 2024–2025 action plan for the national open data policy, the country has adopted an innovative approach to raise awareness of open data's value among younger generations. This involves using social media to disseminate open data content, specifically targeting audiences aged 16 to 35 years. This strategy expands the reach of open data and fosters greater engagement with younger citizens, promoting the value of data as a public asset.

In addition, Spain is leveraging the power of podcasts by developing interviews with open data experts. These interviews, lasting 15 to 20 minutes, will be accompanied by short promotional videos (three to four minutes) for use on social media platforms.

This multifaceted approach positions Spain as a leader in modernising open data communication, blending education and outreach to connect with diverse audiences in the digital age.

Incentives for data publication and access

Legal frameworks and open data infrastructure (e.g. open data portals) can be effective incentivisation mediums for encouraging the publication of dynamic, real-time or citizen-generated data. Dynamic data is data that changes asynchronously over time and is periodically updated as new information becomes available. Real-time data is data that changes and needs updating at very frequent intervals, in most cases several times a minute. Access to dynamic and/or real-time data is most commonly provided via APIs. On the other hand, citizen-generated data is the data that people or their organisations produce to directly monitor, demand or drive change on issues that affect them. Table 4 presents an overview of how countries responded to the questions on this topic.

Table 4: Countries' responses to questions on incentives for data publication and access

	Does the national strategy/policy outline measures to incentivise the publication of and access to real-time or dynamic data?	*Does the national strategy/policy outline measures to incentivise the publication of and access to citizen-generated data?*
EU-27	22 Member States (81 %) report that their national strategy/policy outlines measures to incentivise the publication of and access to real-time or dynamic data. **Bulgaria** is a new addition to this group.	14 Member States (51 %) report that their national strategy/policy outlines measures to incentivise the publication of and access to citizen-generated data. **Czechia, Portugal and Slovakia** are the newest countries in this group.
EFTA	**Iceland**, **Norway** and **Switzerland** report that their national strategy/policy outlines measures to incentivise the publication of and access to real-time or dynamic data, with **Switzerland** being the most recent addition.	None of the three participating candidate countries reports that its national strategy/policy outlines measures to incentivise the publication of and access to citizen-generated data.
Candidate	**Albania** and **Ukraine** report that their national strategies and policies outline measures to incentivise the publication of and access to real-time or dynamic data.	**Ukraine** reports that its national strategy/policy outlines measures to incentivise the publication of and access to citizen-generated data.

(Questions P5 and P6)

Legal frameworks play an important role in enabling the publication of and access to dynamic and/or real-time data, as well as citizen-generated data. Many countries, in their transposition of the open data directive, mandate the immediate publication of dynamic and/or real-time data for reuse. Typically, this publication is mandated to be made accessible through appropriate APIs. **Denmark** and **Luxembourg** mentioned in their survey responses that they also require the option of mass download when appropriate.

Some countries' open data legal frameworks establish consent mechanisms for sharing citizen-generated data. This transparency fosters greater trust, thus empowering citizens and potentially increasing their willingness to share data for public benefit. Namely, **Denmark**, **Estonia** and **Cyprus**

note that they have a process whereby citizens can digitally inform the government if they consent to their personal data being processed or shared with others.

Some countries leverage an open data infrastructure, such as open data portals, to incentivise publication and access to various types of data. Specifically, **Spain**, **Luxembourg** and **Finland** highlight measures to improve (semantic) interoperability of dynamic data on their portals. Additionally, **Bulgaria**, **Estonia**, **France** and **Poland** highlight the user-friendliness aspect of their national open data portals and that everyone has the ability to publish data. **France** specifically notes that the tools and processes for publishing data are the same for all types of providers; however, a badge is provided to what the portal identifies as official sources (i.e. public sector organisations).

Highlight from Iceland – the secure national data exchange infrastructure Straumurinn

Iceland is in the process of implementing Straumurinn, a cutting-edge national data exchange infrastructure based on the X-Road technology. This system facilitates secure, real-time data exchange between government agencies, municipalities and private companies, thereby enhancing the quality and efficiency of public services.

Straumurinn serves as the backbone for a central service portal through which Icelandic citizens can access a wide range of public services in one secure location. This initiative emphasises equality by providing universal access to services for all citizens.

Developed in collaboration with Estonia and Finland through the Nordic Institute for Interoperability Solutions, Straumurinn offers several critical features:

- **data security** – all communications are encrypted to ensure secure data exchanges;
- **data integrity** – data remains up to date, with direct, authorised communication between service providers and recipients;
- **traceability** – each transaction is traceable and timestamped, ensuring transparency and accountability.

As public administrations may encounter technical and financial constraints in the publication process, some countries include measures to help make it easier for them to publish open data. For example, **Cyprus** provides both internal and external consulting services and technical support to organisations aiming to publish dynamic data. **Slovenia** provides funding to promote accessibility and the use of data on its national portal, and this includes dynamic data. **Bulgaria** also includes a clause in its national open data law whereby public bodies that do not have the necessary technical and financial capabilities to make dynamic data available for reuse immediately are allowed to publish data within a longer time frame and with temporary technical constraints.

Countries often encourage the publication of and access to dynamic and/or real-time data and citizen-generated data through sector-specific (e.g. health, environment and public transport) initiatives. For example, initiatives such as the DataDonor initiative (**Denmark**), Donate Your Speech (**Estonia**) and GelAvista (**Portugal**) encourage citizens to create data for research in various fields. For real-time data access, **Denmark** and **Ireland** have initiatives that display all public electronic car-charging stations in real time. In Berlin, the Jelbi app provides bus and train timetable data using real-time transport data and geodata from participating sharing partners.

Highlight from Germany – the Jelbi mobility app
The Jelbi mobility app from Berliner Verkehrsbetriebe (BVG) combines the mobility offers of numerous partners in a single app with a user profile and thus provides a large selection of transport options. It also includes important information such as fares, vehicle locations and journey times to the destination directly in one place. The app uses real-time transport data and geodata from the participating sharing partners and the Berlin-Brandenburg Transport Association (VBB), whose bus and train timetable data (lines, departure times, routes, etc.) are regularly provided via the Berlin Open Data portal.

Supporting the reuse of open data

The primary aims of the open data directive are to encourage the opening of public sector information and to stimulate its reuse. Therefore, measures in the country's open data strategy or policy that support the reuse of open data by the public and private sectors can support the downstream activities of making data openly available. Table 5 presents an overview of how countries responded to the questions on this topic.

Table 5: Countries' responses to questions on supporting the reuse of open data

	Does the national strategy/policy foster the discoverability of data from your country on data.europa.eu?	*Does the national strategy/policy outline measures to support the reuse of open data by the public sector?*	*Does the national strategy/policy outline measures to support the reuse of open data by the private sector?*
EU-27	23 Member States (85 %) report that their policies and strategies involve the publishing of data on data.europa.eu. **Portugal** is the newest country to report doing this. Nonetheless, the other Member States tend to make their data discoverable on data.europa.eu in practice, even though this is not explicitly fostered in a policy or strategy.	26 Member States (96 %), **all except Belgium**, report that their open data policies and strategies outline measures to support the reuse of open data by the public sector.	23 Member States (85 %), **all except Bulgaria**, **Croatia**, **Luxembourg** and the **Netherlands**, report that their open data policies and strategies outline measures to support the reuse of open data by the private sector. **Portugal** is the newest country to report this.
EFTA	**Norway** reports that its policies and strategies involve the publishing of data on data.europa.eu to foster discoverability.	All three participating EFTA countries report that their open data policies and strategies outline measures to support the reuse of open data by the public sector.	All three participating EFTA countries report that their open data policies and strategies outline measures to support the reuse of open data by the private sector.

	Does the national strategy/policy foster the discoverability of data from your country on data.europa.eu?	*Does the national strategy/policy outline measures to support the reuse of open data by the public sector?*	*Does the national strategy/policy outline measures to support the reuse of open data by the private sector?*
Candidate	**Ukraine** reports that its policies and strategies involve the publishing of its country's data on data.europa.eu to foster discoverability.	All four participating candidate countries report that their open data policies and strategies outline measures to support the reuse of open data by the public sector, with **Albania** being the most recent country to report this.	All four participating candidate countries report that their open data policies and strategies outline measures to support the reuse of open data by the private sector.

(Questions P7, P8 and P9)

A prominent trend in country responses about enhancing the reuse of open data by both the private and the public sectors is ensuring that open data is accessible and of high quality. For example, many countries have committed to using standardised formats and ensuring common architectural principles and standards across all providers (e.g. by adhering to the findable, accessible, interoperable and reusable (FAIR) data principles). For example, the Irish open data strategy for 2023–2027 emphasises the importance of ensuring data is fit for purpose, standardised and held in a condition that makes it FAIR. The national Irish data repository for Ireland's humanities, cultural heritage and social sciences digital data also commits to ensuring that open data adheres to FAIR principles. Several countries also focus on improving interoperability capabilities to improve accessibility. Specifically, the **Netherlands** is creating a federative system that connects and integrates open data from various sources within the country. **Denmark** and **Poland** are improving their open data infrastructures, with **Denmark** working to modernise its basic data registries and **Poland** funding projects to improve its open data portal. Several countries report that the data.europa.eu platform is a popular outlet for open data reuse. This is because it is an easily accessible central hub with built-in interoperability features, offering countries a unified space for seamless data sharing across borders.

Another prominent trend is the use of training and capacity-building initiatives to improve data quality and reuse. Many countries prioritise educating officials from the public sector to enhance data literacy. For instance, **Croatia** focuses on training public officials to monitor compliance with open data laws, while **Cyprus**, **Estonia**, **Ireland**, **Lithuania**, **Slovenia** and **Switzerland** offer dedicated training programmes to build competencies within government institutions. Additionally, **Serbia** and **Slovenia** report that they actively organise training sessions with a broad audience, including the private sector, to encourage data reuse. In addition, **Portugal** is providing free data analysis and visualisation tools on its open data portal to upskill reusers.

Finally, collaborative efforts and community engagement are further recurring trends in the promotion of data reuse among both the private and the public sectors. Countries such as **Estonia**, **Ireland**, **Greece**, **Croatia** and **Portugal** report that they are promoting open data reuse by organising a range of public events, workshops and networking opportunities. **Greece**, **Slovenia** and **Ukraine** also note that they organise events such as hackathons and competitions to increase open data reuse.

Highlight from Austria – the Cooperation Open Government Data initiative
Established as a pivotal component of Austria's open data strategy, Cooperation OGD Austria serves as a collaborative platform between the Federal Chancellery of Austria and major cities such as Vienna, Linz, Salzburg and Graz. This initiative is designed to include cross-border partners from Germany, Liechtenstein and Switzerland in the near future, expanding its influence and reach. It encompasses a diverse array of stakeholders, namely from communities, academia, culture and the economy, all of which are committed to enhancing the open data landscape in Austria. Cooperation OGD Austria fosters an environment that promotes effective collaboration among local communities, including citizens, businesses and researchers. The initiative facilitates knowledge exchange and encourages active participation from various stakeholders within the open data ecosystem through regular meetings and networking events, such as the Vienna open data meet-ups. These gatherings serve as vital opportunities for sharing insights, challenges and best practices related to open data. The Austrian government reports that this cooperation has created significant synergies among the cities involved and has led to a marked increase in open data reuse across the four cities.

Data inventories

A data inventory is a comprehensive catalogue of the datasets held by an organisation and can be used to plan the opening of appropriate datasets. Data inventories can also include data collected by public bodies that cannot be published as open data (e.g. in relation to the EU data governance regulation (Regulation (EU) 2022/868)). Table 6 presents an overview of how countries responded to the questions on this topic.

Table 6: Countries' responses to questions on data inventories

	Do policies and strategies mandate that public bodies carry out and maintain a data inventory, whether at the national or local level?	*Do these data inventories include the data collected by public bodies that cannot be published as open data?*
EU-27	26 Member States (96 %), **all except** the **Netherlands**, report that their open data policy or strategy mandates that public bodies maintain a data inventory.	25 Member States (92 %), **all except** **Bulgaria** and the **Netherlands**, report that their data inventories include the data collected by public bodies that cannot be published as open data.
EFTA	**Norway** and **Switzerland** report that their open data policy or strategy mandates that public bodies maintain a data inventory.	**Norway** and **Switzerland** report that their data inventories include the data collected by public bodies that cannot be published as open data.
Candidate	**Albania**, **Bosnia and Herzegovina** and **Ukraine** report that their open data policy or strategy mandates that public bodies maintain a data inventory.	**Albania**, **Bosnia and Herzegovina** and **Ukraine** report that their data inventories include the data collected by public bodies that cannot be published as open data.

(Questions P10-a and P10-b)

Data inventories are often part of broader efforts in countries' national policies/strategies to manage data efficiently, ensure interoperability across systems and reduce redundant data collection. Regular data audits are often mandated to ensure data inventories are up to date and accurate, particularly in the context of open data and compliance with the general data protection regulation (Regulation (EU) 2016/679).

Highlight from Finland – the Finnish comprehensive data inventory framework

In **Finland**, maintaining a data inventory is federally mandated. Specifically, most public sector organisations are legally required to maintain a data inventory, as specified in the Act on Information Management in Public Administration (906/2019). In addition, since 2021, Finnish public sector entities have been required to maintain an information management model that outlines the management of datasets, the implementation of rights and restrictions relating to access to information, the implementation of interoperability of information systems and information pools, and the maintenance of information security.

The Ministry of Finance of Finland maintains the public sector information management map, which describes the data resources to utilise and the procedures for accessing data from the data resources. The information management model includes both open data and data resources that are not available or that are not possible to publish as open data.

In addition, the Act on the Openness of Government Activities (621/1999) mandates that the catalogues listing the data inventories be published as open data. These catalogues give an indication of what each data or information repository holds, for example the City of Vantaa's catalogues of information systems. The dataset provides a list of all of the information systems in use in the city, information on system ownership and technical responsibility, and a brief description of each information system.

Highlight from Slovakia – data inventory for enhanced transparency and accountability

In **Slovakia**, it is mandated that data inventories must include detailed records for all datasets managed by public institutions, not just those available to the public. This comprehensive approach ensures transparency about datasets, even if they are restricted for reasons such as privacy, commercial confidentiality, statistical confidentiality, national security or intellectual property.

Key elements of Slovakia's practice include the following.

- **Inclusive data inventory.** Slovakia's data inventory encompasses all datasets managed by public institutions, ensuring that both open and non-open data are documented. This includes maintaining records of datasets that cannot be publicly accessed, with clear reasons provided for their restricted status.
- **Detailed metadata and documentation.** The data inventory model in Slovakia is designed to include detailed metadata for all datasets. This documentation provides an insight into the nature of each dataset, including non-public ones, and explains why certain data cannot be released. This practice supports transparency by informing stakeholders about the data held by public bodies, even if it is not openly accessible.
- **Model structure and public accessibility.** The Data Unit at the Ministry of Investments, Regional Development and Informatization has developed and published a model structure for data inventories. This model is publicly accessible and includes documentation for datasets, contributing to a transparent data management process.

Prioritising high-value datasets

HVDs are datasets that hold significant potential for economic, social or environmental benefits when made openly available. Commission Implementing Regulation (EU) 2023/138, adopted in December 2022 and published in January 2023, lays down a list of specific HVDs and the arrangements for their publication and reuse.

The ODM questionnaire included two questions to inquire about countries' progress with implementing the EU regulation on HVDs. Table 7 presents an overview of how countries responded.

Table 7: Countries' responses to questions on implementing the EU regulation on HVDs

	Is your country applying Commission Implementing Regulation (EU) 2023/138 on HVDs?	*Have the public bodies in your country denoted relevant datasets as HVDs in their metadata?*
EU-27	All Member States (100 %) report that they are working towards applying Commission Implementing Regulation (EU) 2023/138 on HVDs.	21 Member States (77 %) report that their public bodies with HVDs have denoted this in the dataset's metadata.

(Questions P11 and P12)

Non-EU countries were not surveyed on this question, since this regulation applies only to EU Member States.

On average, progress is most advanced for **statistics** (80 %) and **geospatial** (77 %) datasets (Figure 3). In contrast, the high-value category of 'companies and company ownership' (69 %) has seen the lowest average progress, followed by **mobility** datasets (70 %).

Turning to the underlying requirements, the most advanced progress is seen in terms of identifying and inventorying HVDs (technical progress) (83 %), followed by addressing legal barriers (legal progress) (77 %) and setting up new roles and workflows (organisational progress) (77 %). Requirements related to technical progress score the lowest, with the requirements of quality metadata (71 %), machine-readable formats via APIs (69 %) and bulk download (66 %) showing the lowest average progress.

Estonia, **Lithuania**, **Latvia**, **Denmark**, **Slovenia, Poland** and **Finland** are highly mature in terms of their implementation of the HVD regulation, achieving above 90 % maturity on average. On the other hand, **Bulgaria**, **Croatia** and **Greece** report the least progress in implementing the HVD regulation, scoring less than 50 % on average.

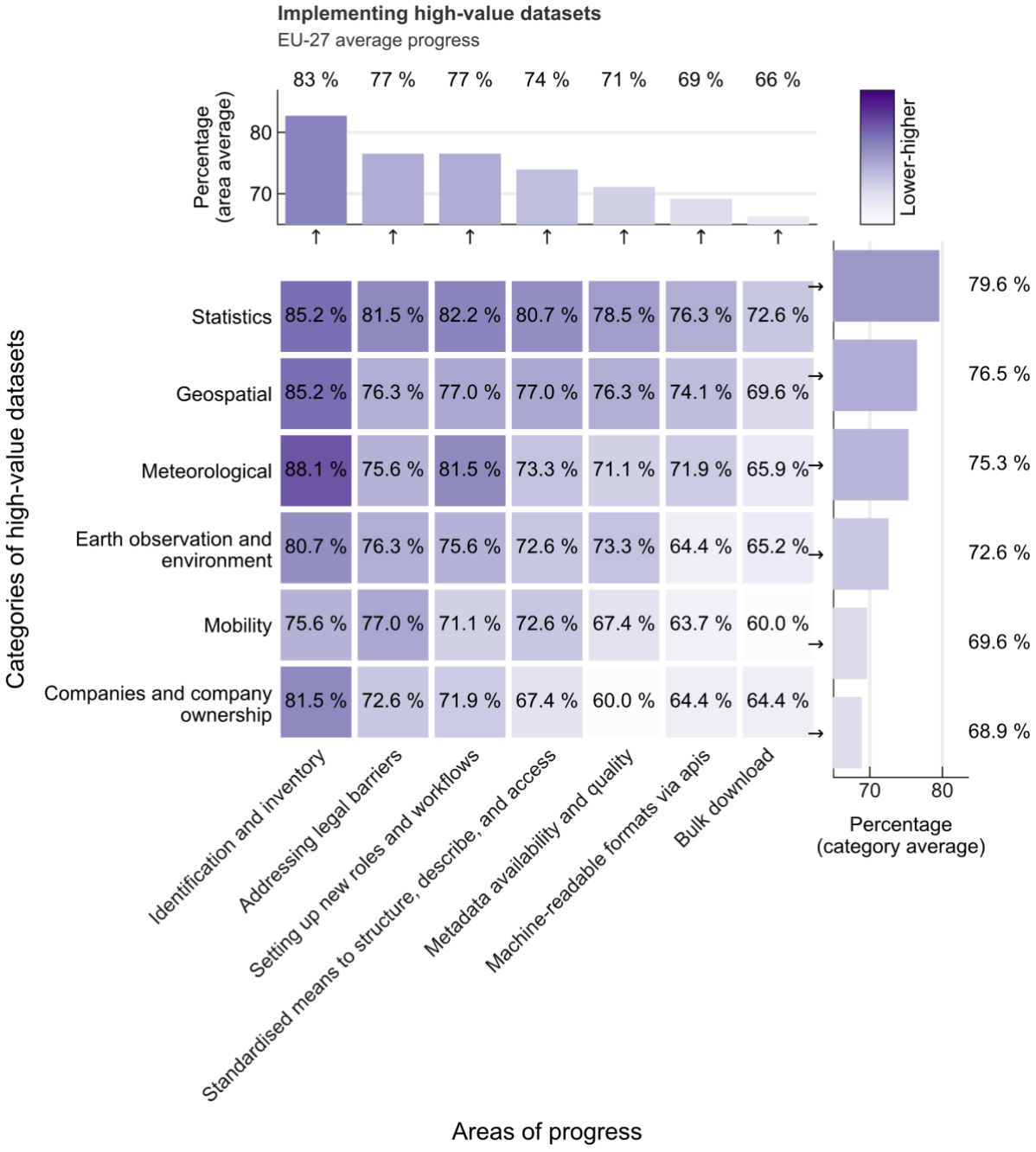

Figure 3: Average maturity scores of the six categories of HVDs and seven areas of activities

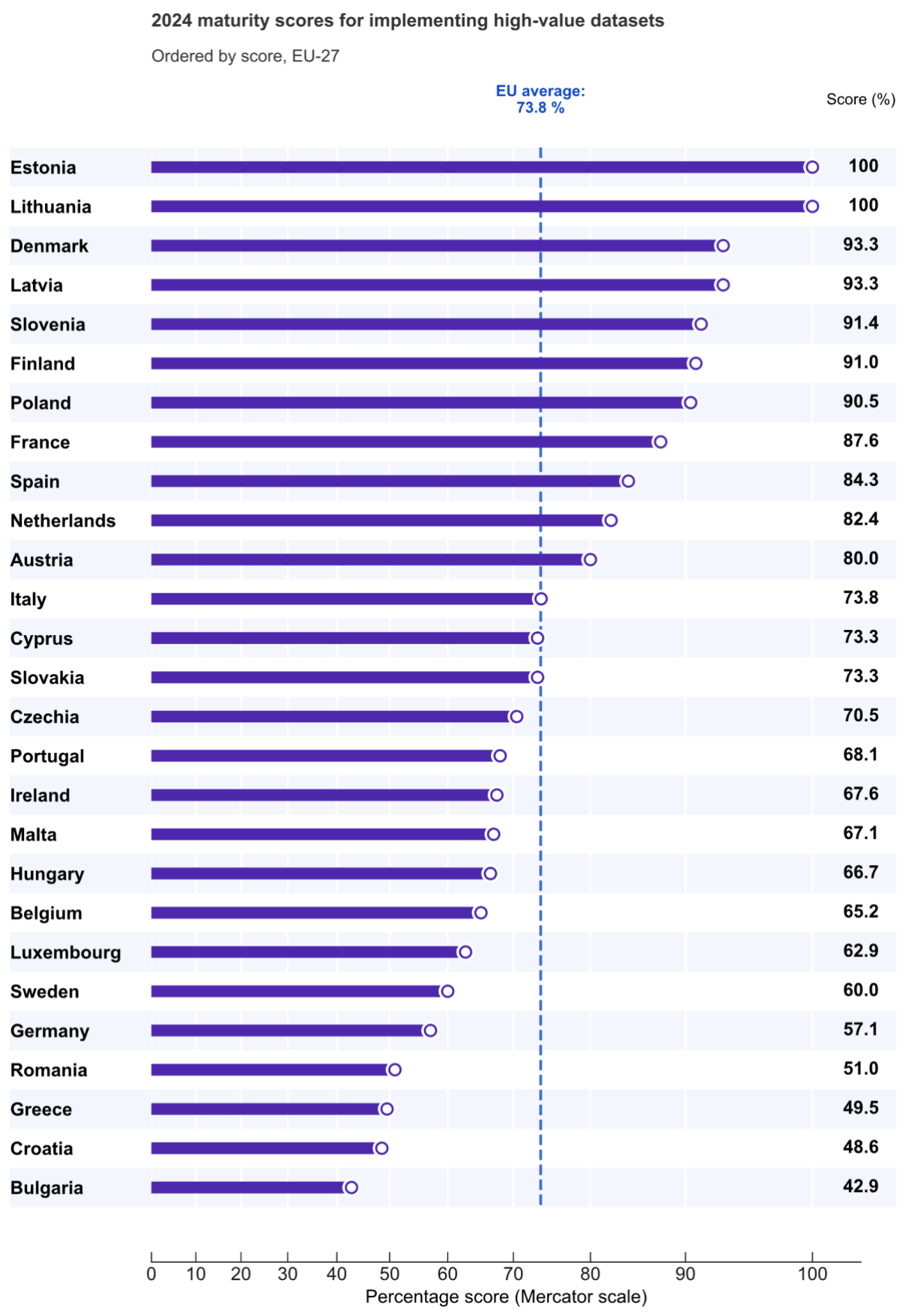

Figure 4: 12 Member States are at or above the EU average maturity for implementing the requirements on HVDs

4.3. Governance of open data

This indicator evaluates the governance structures and operating models in place at the national, regional and local levels to support open data initiatives. This includes the appointment of civil servants with a remit on open data and the exchange of knowledge and experiences within the public sector and with open data reusers.

Governance structures

A governance structure for open data refers to the formal system or framework that ensures various open data stakeholders' participation, collaboration and inclusion. This framework helps to ensure that open data initiatives are inclusive, transparent and aligned with the needs of all stakeholders. Governance structures can be top-down, with coordinating power exercised by an established body, or enacted using a hybrid model, allowing regional autonomy while maintaining central oversight. Either way, countries will often have mechanisms for engaging stakeholders within their governance systems. Table 8 presents an overview of how countries responded to the questions on this topic.

Table 8: Countries' responses to questions on governance structures

	Is there a governance structure in place that enables the participation and/or inclusion of various open data stakeholders?	*How would you classify the model used for governing open data in your country?*
EU-27	25 Member States (93 %), **all except Bulgaria** and **Croatia**, report that their governance structures enable the participation and inclusion of various stakeholders in open data policies.	20 Member States (74 %) report using a hybrid model, combining elements of a top-down and a bottom-up approach. Seven Member States (26 %) report that they implement a top-down approach.
EFTA	**Iceland**, **Norway** and **Switzerland** report that their governance structures enable the participation and inclusion of various stakeholders in open data policies, with **Iceland** as the most recent addition to this group.	All three participating EFTA countries report using a hybrid model, combining elements of a top-down and a bottom-up approach.
Candidate	**Albania** and **Ukraine**, along with **Serbia** as a new addition this year, report that their governance structures enable the participation and inclusion of various stakeholders in open data policies.	All four participating candidate countries report using a hybrid model, combining elements of a top-down and a bottom-up approach.

(Questions P13 and P14)

Most countries involve various stakeholders from different sectors, including government, civil society, academia and the private sector, in their open data governance structures. Typically, countries report that a centralised entity is established to govern open data activities. Indeed, all countries that report that their governance model uses a top-down approach (i.e. **Bulgaria**, **Czechia**, **Estonia**, **Ireland**,

Greece, **Cyprus** and **Slovenia**) also mention having such a central coordinating entity, but so do several countries that report a hybrid governance model. In hybrid models, this is often noted to be due to the institutional and political structure of the country. In this model, local and regional bodies maintain the autonomy to pursue their own open data initiatives. At the same time, the central government retains oversight to offer guidance, allocate funding and prevent redundancies.

Countries like **Austria**, **Bulgaria**, **Estonia**, **Greece**, **Iceland**, **Latvia**, **Lithuania**, the **Netherlands**, **Poland** and **Ukraine** have assigned oversight of open data affairs to specific national ministries. On the other hand, **Ireland** and **Cyprus** have established open data governance boards, comprising professionals from public services, academia and the private sector, to provide strategic direction to open data initiatives. Furthermore, countries such as **Denmark**, **Hungary** and **Romania** coordinate open data efforts through specialised agencies responsible for broader digital governance and data issues. Meanwhile, **France**, **Romania** and **Finland** utilise interministerial and interdepartmental structures for managing open data initiatives.

> ***We have a decentralised public sector, but the Ministry of Finance and the Ministry of Higher Education, Science, and Innovation are responsible for providing open data. Currently, the stewardship is at the ministerial level, but the execution is decentralised.***
>
> **Iceland's survey response**

Among most countries, there is an emphasis on participatory governance methods. There are certain ways in which most governments integrate different forms of collaboration, coordination and stakeholder engagement within their governance system.

One prominent method is the establishment of formal working groups and task forces as a means to govern open data activities. These groups provide a forum for ongoing discussions and can help enhance decision-making. Specifically, **Belgium**, **Czechia**, **Estonia**, **Romania**, **Serbia**, **Slovakia** and **Ukraine** note that their focus groups include diverse stakeholders, such as government officials, local authorities, civil society, the technology community, academia and the private sector. Whereas some groups, such as those from **Belgium**, **France** and **Poland**, are formalised around specific open data strategies or networks, others, such as in **Estonia** and **Slovakia**, are more informal, with members not necessarily formally appointed but rather included through informal mechanisms like mailing lists or voluntary participation. Various countries also note that they hold regular structured meetings as a mechanism for participatory governance, such as with a network of national ministries.

Furthermore, open feedback and consultation mechanisms are also used to engage various stakeholders in managing open data matters. For instance, **France** and **Lithuania** systematically collect feedback from stakeholders on open data that they access through their national open data platforms. **Denmark** has two forums managed by internal representatives who gather feedback from open data users.

Highlight from Czechia – adapting governance models over time
An interesting dynamic noted by **Czechia** is the transition of governance models. In Czechia, open data measures were initially driven by localities; however, since the introduction of national open data legislation, the national government has taken the steering role in open data initiatives.

Local and regional governance structures

To ensure the effective publication and reuse of open data across a country, governance must be established not only at the national level but also at the subnational level. This entails national governments creating an enabling environment for subnational entities to thrive in their open data endeavours. Although structural and legal limitations might exist, national governments often provide technical, monetary and advisory support to local administrations for their open data initiatives. Table 9 presents an overview of how countries responded to the questions on this topic.

Table 9: Countries' responses to questions on local and regional governance structures

	Does the governance structure ensure that the local and regional open data initiatives are facilitated and supported at the national level?	*To what degree do local/regional public bodies conduct open data initiatives?*
EU-27	24 Member States (89 %), **all except Germany** and **Finland**, report that the governance structure in their country ensures that local and regional open data initiatives are facilitated and supported nationally. **Malta, Austria and Portugal** are the newest countries to make this addition to their governance structure.	Nine Member States (33 %) report that all local/regional public bodies in their country conduct open data initiatives, and seven Member States (25 %) report that the majority of local/regional public bodies do. **Czechia** reports that there has been increased participation, from a few public bodies in 2023 to the majority being involved in these efforts in 2024. **Cyprus** and **Malta** indicate that this question is 'not applicable' due to their small size and the absence of regional governance structures.
EFTA	**Iceland** and **Norway** report that the governance structure in their country ensures that local and regional open data initiatives are facilitated and supported nationally. **Switzerland** reports that this question is 'not applicable', as the laws behind its national governance structure do not directly apply at the regional level but instead serve as guidelines for regional governance .	**Norway** and **Switzerland** report that the majority of the local/regional public bodies in their country conduct open data initiatives. **Switzerland** reports that there has been an increase in participation, from approximately half of local/regional public bodies in 2023 to a majority in 2024 being involved in these efforts. **Iceland** reports that only a few public bodies in the country conduct open data initiatives.
Candidate	**Serbia** and **Ukraine** report that the governance structure in their country ensures that local and regional open data initiatives are facilitated and supported nationally.	**Ukraine** reports that all local/regional public bodies conduct open data initiatives. **Serbia** reports that approximately half of the local/regional public bodies conduct open data initiatives, and **Albania** and **Bosnia and Herzegovina** report that only a few public bodies do.

(Questions P15 and P16)

A central national entity typically facilitates local and regional open data initiatives from the national level. Nonetheless, some countries, such as **Belgium**, **Germany** and **Switzerland**, cite structural or legal limitations (e.g. federalised structures) as reasons for not having robust national support for local and regional open data initiatives. That being said, many of these countries report that cooperation may exist between their national and regional bodies.

> ***Local data initiatives are very important in France and are often encouraged ... they often constitute interesting experiments that can be generalised.***
>
> **France's survey response**

When support for local and regional open data initiatives is provided, national entities do this in various ways.

- **Technical support. Estonia**, **Ireland**, **Greece**, **Spain** and **France** note that they provide technical and advisory support to regional and local governments from their national governments. For example, Greece's Ministry of Digital Governance offers technical support for publishing local datasets, and Spain's Aporta Initiative (managed by the Ministry for Digital Transformation and Public Service) offers specialised advice on open data technical and methodological aspects. **Croatia**, **Poland** and **Portugal** note that they use national data portals as a way to provide a platform for local authorities to share their data without them needing to develop their own systems.
- **Funding support.** Some countries also note that the national entity may provide monetary support to local and regional open data initiatives. For example, **France's** national government funds digital initiatives through the Public Action Transformation Fund.
- **Capacity-building support.** Some countries note that they provide structured programmes and events to facilitate local and regional open data initiatives. While these can come in the form of open data workshops or training on behalf of the national entity responsible for open data matters (as in the case of **Poland**), other countries, such as **Czechia**, **Cyprus** and **Slovakia**, specifically note that they sponsor, support or encourage local open data hackathons to facilitate engagement with open data.
- **Advisory support.** Some countries (e.g. **Bulgaria**, **Italy**, **Lithuania**, **Poland** and **Sweden**) note that their national governments undertake regular dialogue and knowledge sharing with their regional and local counterparts, which also helps to facilitate open data initiatives at the local and regional levels. In **Lithuania**, this is done through newsletters and public communications from the Ministry of Economy and Innovation. In **Italy** and **Sweden**, dedicated networks of national and municipal personnel exchange information regarding open data initiatives.

Highlight from Serbia – United Nations Development Programme collaboration for promoting local initiatives

In **Serbia**, the Office for Information Technology and e-Government, in collaboration with the United Nations Development Programme, actively supports local and regional open data initiatives. This multi-stakeholder cooperation aims to enhance the effectiveness and reach of open data efforts throughout the country.

Already, more than 50 % of user accounts on the national open data portal are owned by local self-governments. This can be attributed to the engagement that the initiative has fostered from local entities. In fact, over the past seven years, the initiative has supported numerous local events and activities, including the launch of an open data challenge focused on promoting local open data usage. In April 2024, the Office for Information Technology and e-Government provided expert support for the regional open data challenge, facilitated by the United Nations Development Programme and the Regional School of Public Administration.

Highlight from Italy – the Agency for Digital Italy

In **Italy**, the Agency for Digital Italy (AGID) facilitates the implementation of regional digital agendas in alignment with the country's three-year plan for information and communication technology in public administration. These efforts encompass specific actions aimed at enhancing open data initiatives.

A crucial component in each individual public administration is the Office of the Digital Transition Manager (RTD), established by Article 17 of the Digital Administration Code. The RTD oversees the transition to digital operations and reports directly to the political leadership or, in their absence, to the administrative management. This role serves as a vital link between top management, AGID and the Presidency of the Council of Ministers, addressing issues related to the digital transformation of public administrations.

AGID promotes regular dialogue with the appointed digital transition managers in each public administration through a dedicated platform that fosters communities focused on open data. This engagement ensures that the local and regional levels are actively involved and supported in their open data endeavours.

Outlining open data roles and responsibilities

A network of open data officers serves as a system of communication and collaboration between the national open data team and various open data officers across different regions or sectors within the country. Having civil servants across public sector bodies with an official remit on open data can facilitate the process of making data open. Table 10 presents an overview of how countries responded to the questions on this topic.

Table 10: Countries' responses to questions on open data roles and responsibilities

	Is a document describing the responsibilities and governance structure of the national (and/or regional/local) open data team publicly available?	*Does the governance model include the appointment of official roles in civil services that are dedicated to open data (e.g. open data officers)?*
EU-27	24 Member States (88 %), with **Malta** and **Portugal** as the most recent additions, report that they have a publicly available document describing the responsibilities and governance structure of the national (and/or regional/local) open data team. **Denmark**, **Croatia** and **Sweden** do not report having such a document available.	25 Member States (95 %), **all except Belgium** and **Denmark**, report that their governance model includes the appointment of dedicated open data roles in civil services.
EFTA	**Switzerland** reports that it has a publicly available document describing the responsibilities and governance structure of the national (and/or regional/local) open data team.	**Iceland** and **Switzerland** report that their governance models include the appointment of dedicated open data roles in civil services.
Candidate	All four participating candidate countries, including **Serbia** as the most recent addition, report that they have a publicly available document describing the responsibilities and governance structure of the national (and/or regional/local) open data team.	**Albania**, **Serbia** and **Ukraine** report that their governance models include the appointment of dedicated open data roles in civil services.

(Questions P17 and P19)

Several countries, such as **Germany**, **Spain**, **Croatia**, **Poland** and **Slovenia**, report that they have specific national laws that require the appointment of specific roles focused on open data. In particular, in **Spain** over the past year, some government bodies have started creating a unit responsible for information, as required by Law 37/2007. This unit will manage the reuse of public sector information (i.e. open data). Many countries appoint a designated coordinator, steward or officer for open data in their public bodies. These are specific individuals in government bodies who are tasked with managing open data affairs. However, in some countries, open data matters are designated as the responsibility of broader data officer roles, as these roles often existed prior to open data legislation. Individuals in these roles manage open data on top of other data-related matters (i.e. management, quality and data governance). For example, in 2022, **Estonia** created the Data Stewards Steering Group, which coordinates data stewards from various public authorities to ensure the sustainable and balanced development of the data field, including open data matters.

Highlight from Cyprus – governance structure outlined in the open data strategic plan for 2023–2027

Cyprus's *Open Data Strategic Plan 2023–2027* outlines its main goals and visions for open data, including action points and critical success factors. In addition, on page 9, the open data governance structure is outlined, displaying different stakeholders and their interactions (Figure 5).

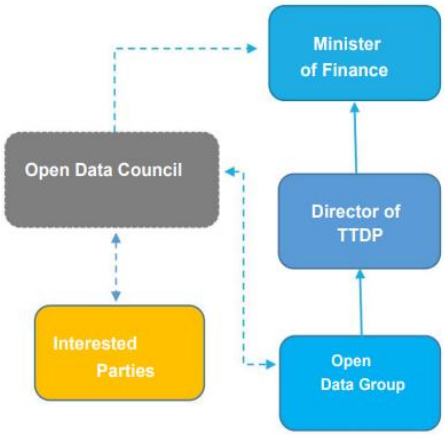

Figure 5: Diagram of Cyprus's governance structure (TTDP: Department of Public Administration and Personnel in Cyprus).

Network of open data team, officers and reusers

Communication and collaboration between various stakeholders are important for fostering a functional open data ecosystem. A regular exchange of knowledge and experiences between stakeholders, both within and across countries, can play a significant role in enhancing the quality and accessibility of open data and in creating feedback loops for improving open data policies. A prominent approach to facilitating these exchanges that is employed by countries is to create formal and informal groups that engage through various platforms and events. Table 11 presents an overview of how countries responded to the questions on this topic.

Table 11: Countries' responses to questions on communication and collaboration between stakeholders

	Is there a regular exchange of knowledge or experiences between the national open data team and the team maintaining the national portal?	*Is there a regular exchange of knowledge or experiences between the national open data team and the wider network of open data officers in your country?*	*Is there a regular exchange of knowledge or experiences between public sector bodies (i.e. the providers) and open data reusers (e.g. academia, citizens and businesses)?*
EU-27	26 Member States (96 %), **all except Finland**, report that the national open data team and the team maintaining the national portal in their countries have regular exchanges.	All Member States (100 %), with **Croatia** as the most recent addition, report that the national open data team and the wider network of open data officers in their countries have regular exchanges.	All Member States (100 %) report that public sector bodies and open data reusers in their countries regularly exchange knowledge and experiences.

	Is there a regular exchange of knowledge or experiences between the national open data team and the team maintaining the national portal?	*Is there a regular exchange of knowledge or experiences between the national open data team and the wider network of open data officers in your country?*	*Is there a regular exchange of knowledge or experiences between public sector bodies (i.e. the providers) and open data reusers (e.g. academia, citizens and businesses)?*
EFTA	All three participating EFTA countries report that the national open data team and the team maintaining the national portal in their countries have regular exchanges.	All three participating EFTA countries report that the national open data team and the wider network of open data officers in their countries have regular exchanges.	All three participating EFTA countries report that public sector bodies and open data reusers in their countries regularly exchange knowledge and experiences.
Candidate	**Albania**, **Serbia** and **Ukraine** report that the national open data team and the team maintaining the national portal in their countries have regular exchanges.	**Albania** and **Ukraine** report that the national open data team and the wider network of open data officers in their countries have regular exchanges.	**Serbia** and **Ukraine** report that public sector bodies and open data reusers in their countries regularly exchange knowledge and experiences.

(Questions P18, P20 and P21)

Exchanges between the national open data team and the team maintaining the national portal can be formalised around established groups, such as in **Denmark** (the forum for data distributors), **Germany** (the GovData working group) and **Austria** (Cooperation OGD Austria). Such exchanges can also be informal and occur on an ad hoc basis; this may be because the open data team and the team maintaining the portal work within the same institution (e.g. in **Hungary**, **Italy**, **Norway**, **Romania** and **Serbia**), such as an agency or ministry, or because they are part of the same team (e.g. in **Cyprus**, **France**, **Greece**, **Malta**, **Poland**, **Switzerland** and **Ukraine**). In contrast, some countries use external parties to maintain their open data portals (e.g. **Albania** and **Ireland**).

Similarly, exchanges between the national open data team and the wider network of open data officers are often arranged through working groups. Some exchanges can also be arranged around workshops and specialised forums or events, such as the open data liaison officer meeting in **Ireland**, the Interbestuurlijke Datastrategie Café in the **Netherlands** and the data stewards event in **Slovenia**. These meetings are sometimes specifically focused on training and development activities. For example, in **Ukraine**, the Open Data Academy was set up to boost skills through training programmes.

On the other hand, exchanges between national public sector bodies and open data reusers are often arranged through conferences and forums. Conferences such as the **Danish** Forum for the Use of Basic Data and Other Public Data, the **German** Berlin Open Data Day, the **Irish** National Open Data Conference and the **Swiss** Open Data Beer bring together public sector officials, academics, businesses and other stakeholders to discuss open data issues and innovations.

Furthermore, regular exchange of knowledge between the public sector and open data reusers is often fostered through collaborative working groups that include representatives of the public sector, the private sector, academia and civil society. Some examples include the **Bulgarian** working group on

transposing the open data directive, which includes representatives of public sector bodies, academia, businesses, non-governmental organisations and citizens, and the **Serbian** Open Data Working Group, which includes participants from the technology community, the media, academia and civil society.

Digital platforms are also used in this context to facilitate knowledge exchange. In addition to more general digital platforms (e.g. email and online meetings), some countries report that they have developed unique platforms dedicated to engaging various users in open data topics, such as the **Dutch** Geoform platform or the **Italian** Forum Italia platform.

Highlight from Norway – Datalandsbyen (Data Village)
Norway's Datalandsbyen, or 'Data Village', is an interactive online forum designed to facilitate engagement among users. It allows individuals to pose questions about data, engage in discussions, share their projects, connect with others and explore potential collaborations. In addition, it enables constant communication between the open data team, data professionals, the team maintaining the Norwegian national portal, open data reusers and the public.

4.4. Open data implementation

This indicator evaluates the processes and activities in place to implement the open data policies and strategies outlined. Specifically, this indicator examines the initiatives that assist data providers, including holders of real-time, geospatial and citizen-generated data, with their open data publication process and that promote open data literacy among civil servants and the broader public.

Data publication plans

Data publication plans are specific workflows or internal data management processes for the publication of datasets. Data publication plans and related monitoring mechanisms are needed to enable those responsible to oversee the progress being made towards opening up datasets and to intervene in the event of barriers. Table 12 presents an overview of how countries responded to the question on this topic.

Table 12: Countries' responses to the question on data publication plans

	Do data publication plans exist at the public body level?
EU-27	All Member States (100 %), with **Lithuania** and **Portugal** as the most recent additions, report that they have publication plans for open data at the public body level.
EFTA	**Norway** and **Switzerland** report that they have publication plans for open data at the public body level.
Candidate	**Albania** and **Ukraine** report that they have publication plans for open data at the public body level.

(Question P22)

The majority of countries have implemented legal frameworks or regulations that require public sector bodies to develop and implement data publication plans. In particular, countries tend to use centralised national platforms or geoportals with specific workflows and procedures to help them publish open data.

Highlight from Denmark – structured data publication planning
In **Denmark**, data publication plans exist at various levels within public bodies. • **Statistics Denmark.** Statistical datasets follow a detailed release calendar, with publication dates announced at least a year in advance. The processes and workflows are documented in the statistical documentation available for each dataset. • **Basic data.** The Datafordeleren platform connects to more than 20 public data registries, making it a central hub for accessing various types of public data. This integration simplifies the data discovery process for users by providing a one-stop shop for diverse datasets ranging from demographic information to economic indicators. Information about new releases, planned service changes and documentation is easily accessible through the website. Additionally, Datafordeleren supports various formats for data retrieval, enhancing its usability for developers and analysts. • **General guidelines.** The Danish Agency for Digital Government provides a reference architecture for data sharing and technical guidance that data publishers can use when developing their publication plans. By adhering to these documents, agencies can enhance collaboration and streamline processes. This framework promotes best practices in data management and encourages innovation by enabling seamless data integration across various platforms and services.

Implementation plans and monitoring processes

It is important that governments establish processes to ensure the effective implementation of their policies and strategies and to ensure continuous updates to maintain their relevance. Table 13 presents an overview of how countries responded to the questions on this topic.

Table 13: Countries' responses to questions on implementing plans and monitoring processes

	Are there processes to ensure that the open data policies/strategy previously mentioned are implemented?	*Do you update your policy/strategy as appropriate to ensure its success, such as based on data collected for monitoring?*
EU-27	All Member States (100 %), with **Belgium** and **Portugal** as the most recent additions, report that they have processes to ensure that their open data policies and strategies are implemented.	19 Member States (70 %) report that they have procedures in place to update their policy/strategy as appropriate.
EFTA	All three participating EFTA countries report that they have processes to ensure that their open data policies and strategies are implemented.	**Norway** and **Switzerland** report that they have procedures in place to update their policy/strategy as appropriate.
Candidate	**Albania**, **Serbia** and **Ukraine** report that they have processes to ensure that their open data policies and strategies are implemented.	**Albania**, **Serbia** and **Ukraine** report that they have procedures in place to update their policy/strategy as appropriate.

(Questions P23 and P24)

The most frequently mentioned mechanism for ensuring the implementation of open data strategies and policies is regular progress monitoring. In many cases, the monitoring of progress is mandated by the open data strategies and policies themselves. Additionally, many countries have designated

agencies or councils that are responsible for overseeing the implementation of open data policies and for providing support to ensure the process runs smoothly. For example, **Hungary** mandated the creation of the National Data Asset Council to support the implementation of its open data policy, while **Estonia** created the National Open Data Team in collaboration with multiple agencies to monitor open data plans and provide technical support.

Highlight from Ireland – iterative development and continuous improvement

Ireland employs an iterative process to developing and updating its national open data strategy, emphasising continuous improvement. The Open Data Unit collaborates with a stakeholder working group to draft the strategy, which outlines specific goals, objectives and action plans. After incorporating public feedback on the draft, the strategy is finalised and submitted for review and approval by the governance board and other stakeholders before being presented to the cabinet for government endorsement.

Once approved, the Open Data Unit oversees the implementation of the strategy's initiatives, collaborating with various government agencies and stakeholders. The unit actively monitors user needs and collects feedback from data publishers and users to ensure that the strategy remains effective. This ongoing communication facilitates the identification of necessary revisions to adapt to evolving needs and challenges, initiating a new development cycle.

The most recent updates to the strategy, covering 2023 to 2027, focus on three key pillars: supporting data publishers, maintaining the open data platform and engaging users. This shift towards a more user-centric approach includes strengthening communication channels between data publishers and users to better tailor data offerings to their needs.

In some cases, countries emphasise specific aspects of the policies and strategies for monitoring. For example, open data availability and quality are prominent focuses of countries' monitoring efforts (e.g. as mentioned by **Czechia**, **Italy**, **Luxembourg**, **Poland, Sweden** and **Ukraine**). This includes tracking metadata quality, ensuring compliance with legislation, and assessing data availability and publication timelines.

Publishing annual reports is a frequent way in which countries monitor their progress. These are either made publicly available (e.g. in **Albania**, **Bulgaria**, **Czechia**, **Lithuania**, **Poland**, **Portugal** and **Serbia**) or submitted to federal parliament or institutions overseeing the governance of open data in the country (e.g. in **Croatia**, **Germany**, **Ireland**, **Slovenia** and **Ukraine**). In addition, **France**, **Italy** and **Portugal** provide online tools, such as public dashboards, to monitor the implementation of open data policies in a transparent manner.

In terms of updating policies/strategies, many countries have scheduled policy updates whereby policies are reviewed and amended based on a predetermined time frame. Others employ more adaptive approaches, updating policies when needed. Countries have various means of informing the content and timing of their policy updates. For example, **Latvia**, **Norway** and **Spain** highlight the need to align with international standards (e.g. EU legislation and the UN's sustainable development goals) and maintain consistency with broader frameworks, which serves as a key driver for updating their open data policies and strategies. Similarly, **Estonia** and **Portugal** note that they update their policies and strategies based on the emergence of new technologies.

Monitoring charging practices relating to open data

Legal frameworks often mandate different processes to ensure that public bodies understand when they can charge above the marginal costs and which bodies are permitted to do so. Table 14 presents an overview of how countries responded to the question on this topic.

Table 14: Countries' responses to the question on monitoring charging practices

	Are there any processes in place to assess if public sector bodies are charging for data above the marginal costs?
EU-27	25 Member States (92 %), **all except Hungary** and **Sweden**, report that they implement processes to assess if public bodies charge above the marginal costs for the data they provide. **Romania** is the most recent addition to this group.
EFTA	**Iceland** and **Norway** report that they implement processes to assess if public bodies charge above the marginal costs for the data they provide.
Candidate	**Serbia**, **Ukraine** and, the most recent addition, **Albania**, report that they implement processes to assess if public bodies charge above the marginal costs for the data they provide.

(Question P25)

The majority of countries have put in place clear legal frameworks that stipulate in what cases public sector bodies can charge fees for data and how high these fees can be. **Croatia** notes that its decree also includes an audit of its methodology to determine prices. Often, an open data team or legal body (e.g. executive branches or courts) applies the rules set out in these decrees and laws and coordinates assessments of cases in which fees apply, ensuring they comply with cost regulations.

Often, countries will have publicly available lists of which public bodies are allowed to charge above the marginal costs, how much they are allowed to charge and sometimes (as in the case of **France** and **Latvia**) the methodology for determining the pricing of paid services, and the procedure for approving the pricing. **France** notes that its price list will be reviewed at least every five years and that the details of calculations are published jointly in electronic form on the website of the administration concerned. In the cases of **Ireland** and **Austria**, public bodies are responsible for notifying the national government regarding their choice to charge fees.

On the other hand, **Bulgaria**, **Iceland** and **Spain** note that the onus is on the data requesters interested in accessing data to report if they are being overcharged. This typically involves reporting to a committee, a court or the department overseeing open data matters, which then decides whether the data provider will need to change its fees. **Spain** provides an option in its national catalogue for users to report whether public sector agencies are charging above the marginal costs for data, and the platform administrator team will evaluate it.

Data literacy training and open data publication activities

Activities to support open data publication are initiatives designed to assist data holders in making their data publicly available in an open and accessible format. These activities, which can come in the form of training programmes, often coincide with efforts to develop civil servants' competencies with data. Countries can help to ensure that public sector staff are well equipped to handle data-related responsibilities by aligning open data support with professional development efforts. Table 15 presents an overview of how countries responded to the questions on this topic.

Table 15: Countries' responses to questions on open data publication and data literacy training

	Are there any activities in place to assist data holders with publishing their data as open data?	*Is there a professional development or training plan for civil servants working with data in your country?*
EU-27	26 Member States (96 %), **all except Bulgaria**, have activities in place to assist data providers with their open data publication.	26 Member States (96 %), **all except Malta**, report that they offer professional training to civil servants working with open data. **Latvia** is the latest addition to this group.
EFTA	All three participating EFTA countries report having activities in place to assist data providers with their open data publication.	All three participating EFTA countries report offering professional training to civil servants working with open data.
Candidate	**Albania**, **Serbia** and **Ukraine** report having activities in place to assist data providers with their open data publication.	**Albania**, **Serbia** and **Ukraine** report that they offer professional training to civil servants working with open data.

(Questions P27 and P28)

Structured training programmes on open data and data governance are common in most countries to equip civil servants with the necessary skills for working with open data. These courses are often provided by government and public institutions and are usually accessible asynchronously for civil servants via digital learning platforms (e.g. in **Italy** (Syllabus), the **Netherlands** (RADIO) and **Finland** (eOppiva)). Several countries also collaborate with external organisations to offer specialised data training, such as universities, academic institutions and private companies (e.g. **Greece** collaborates with Microsoft and Oracle to provide official certification in digital competencies for civil servants). Many countries note that they provide on-demand support services to data holders based on specific needs.

Cyprus and **Sweden** note that public sector bodies that wish to publish their data must appoint designated open data personnel, who undergo a training programme and are responsible for ensuring the publication of open data on behalf of that organisation.

Providing technical support for publishing open data is commonplace in all countries. This can come in various forms, such as creating automated data publication scripts (**Luxembourg**), providing assistance on publication aspects such as API standards (**Austria**), developing custom harvesters for large data publishers (**Serbia**) or providing resources to smaller public bodies such as a shared metadata catalogue (**Sweden**). Additionally, **Denmark** and **Estonia** note that they provide financial assistance to data holders to encourage them to publish their data.

Highlight from Luxembourg – activities to support data owners

In **Luxembourg**, various activities are implemented to assist data owners in opening their datasets. These initiatives include the following.

- **Advisory meetings.** During these meetings, data owners discuss their datasets and inventory documents, allowing obstacles to be identified that may have hindered data openness. The team provides legal guidance and technical support as needed.
- **Harvester scripts development.** The team regularly develops custom harvester scripts after collaborating with data owners to obtain their feedback and consent regarding licensing, description and data validity.
- **Publication script guidance.** Assistance is offered to data owners who are writing their own automatic publication scripts, ensuring that they have the necessary support for successful data sharing.
- **Central infrastructure maintenance.** The creation and maintenance of centralised infrastructures, such as the national Inspire platform, the geoportal and the HVD4Gov platform (currently under construction), facilitate the preparation, description, modification and publication of data. These infrastructures establish a clear workflow that ensures that data becomes accessible as open data, searchable, downloadable or usable via APIs and web services on the national open data portal.

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