Open data policies and disclosures

Guidance note 19 - Requirement 7.2

Contents

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1. Summary

Open data can help make governments more transparent and accountable. It can provide the evidence that public money is being managed well and policies are being implemented. Countries that implement the EITI Standard are required to publish data in open formats to enable a broader use and analysis of the information. **To disclose information in open data format means that companies and governments disclose information in a structured manner, that anyone can access, use, and share at any time, for free.** This data can be published on reporting entity pages and on cross-governmental platforms, such as open data portals.

A lot of figures, covering topics such as revenues, production, exports, etc, are published as a result of EITI implementation. Users will want to draw on that data to respond to their questions or build their understanding of their sector. **Disclosing data in open formats ensure users have the best access to that information**. It also means information can be linked with other relevant sources. Publicly available open data is a stepping-stone towards mainstreamed EITI implementation or systematic disclosure of information.

This note provides step-by-step guidance on **developing open data policies**. It paves the way for **creating and publishing** open data. It also contains boxes explaining key open data concepts as these are encountered during the reading. The annexes include **examples** of how governments and companies are publishing data in an open format in EITI implementing countries and provide references for further reading.

What is open data?

Open data is "[...] data and content [that] can be freely used [...] and shared by anyone for any purpose [for free]." Examples of open data files include Excel files and comma-separated-value (CSV) files. PDF files are *not* considered open data, as they are not machine-readable.

More than *available*, open data is *accessible:*

- Data is immediately and continuously available
- Free of cost (or of <u>very</u> low cost)

1. Legal openness: Ensuring users can legally access the data, build on it and share it. Open data must be licensed. Its licence must permit people to use the data in any way they want, including transforming, combining and sharing it with others, even commercially.

2. Technical openness: Ensuring no technical barriers to data use exist. For example, it is not possible to access underlying data of tables and charts contained in PDF reports. These are only accessible if published alongside Excel files or other open data files containing the underlying data.

The EITI recognises that national and international legislation must be observed, with regards to intellectual property and sensitive information.

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2.   EITI Requirement covering open data publication

Requirement 7.2 Data accessibility and open data

Implementing countries should ensure that EITI disclosures are made publicly accessible. The multi-stakeholder group should:

a.   Agree a clear open data policy on the access, release and re-use of EITI data. Government agencies and companies are expected to publish EITI data under an open license, and to make users aware that information can be reused without prior consent.

b.   Make the data available in an open data format online and publicise its availability. Open data format means that data can be made accessible in CSV or Excel format and could contain all tables, charts and figures from EITI Reports.

c.   Complete summary data files for each fiscal year covered by the EITI in accordance with the template approved by the EITI Board.

d.   The multi-stakeholder group is encouraged to make systematically disclosed data machine readable and inter-operable, and to code or tag EITI disclosures and other data files so that the information can be compared with other publicly available data.

Source: EITI Standard 2019, https://eiti.org/document/standard

What is "systematic disclosure" and "mainstreaming"?

In the EITI the terms **'systematic disclosure'** and **'mainstreaming'** are used interchangeably. They refer to the desired end-state, where the EITI's disclosure requirements are met through **routine and publicly available company and government reporting.** This could include public financial reporting, annual reports, information portals and other open data initiatives. **Systematic disclosure is the default expectation**, with EITI Reports used to provide additional context, collating sources where systematic disclosures can be found, and address any gaps and concerns about data quality. EITI disclosure requirements can be met by referencing publicly available information and/or data.

Less resource-intense data collection will also allow EITI implementation to be more effective and focus more on use and the analysis of data, and support of future policy-development in the sector. However, an emerging risk is that "EITI open data" portals are being developed independently of core administrative information management systems, leading to duplication and decreasing focus on systems as the primary source and guarantor of reliable data. Open data policies in EITI countries have often focused on how to make data in EITI Reports more accessible, while **it is often more effective to review the open data policies and practices of the companies and government agencies that are the primary sources of data. Improving reporting entities' open data policies is likely to increase lasting public access to data**.

Part I: Establishing an open data policy

This section suggests steps that multi-stakeholder groups (MSGs) could consider when developing an open data policy, drawing on examples from EITI implementing countries.

An open data policy should ideally state:whether countries and reporting entities provide information under open licenses (OL), clarifying usability and release;

1. **which level and degree of openness will be used (RE versus OF); and**

2. **which degree of standardisation and availability is sought (RDF versus LOD).**

It is important that open data policies, where possible, address the comprehensiveness, timeliness, and retention of historical data covered by EITI reporting. *Data retention* means the continued storage of historical information alongside new data disclosures.

Step 1: Reviewing EITI data accessibility

Before considering options for an open data policy, MSGs are encouraged to assess the current situation regarding the access, release, and re-use of the data required by the EITI Standard. MSGs have often found it helpful to consult typical users of EITI data on their needs and expectations.

The first aspect to **consider is which information is routinely available in open data formats** through government and corporate reporting systems. The second is to **address the accessibility of additional data that is created through the EITI process**.

The **first** aspect is linked to the concept of systematic disclosures[1] as highlighted above. MSGs are strongly encouraged to map[2] existing disclosures or undertake a feasibility study[3] to inform this work. The move towards systematic disclosure means that increasingly, MSGs and national secretariats will need to verify whether disclosures are in open data format at source..[4]

Degrees of openness

Even if EITI data published in Reports have entered the public domain, the accessability of data from reports remains limited, as data contained in large reports are "locked" in the file.

There are five different levels of openness, from "PDF" (not open), to Excel (minimum openness) to "LOD", each tied to different formats or types of file. These are set out on the scale developed by [5-Star Open Data](), as presented below (see also Annex A).

Figure 1: 5-Star open data

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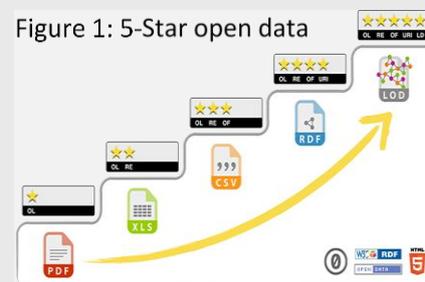
[1] EITI (2017), 'Systematic disclosures'. https://eiti.org/systematic-disclosure
[2] EITI (2017), 'Systematic disclosure toolkit'. https://eiti.org/document/systematic-disclosure-toolkit
[3] EITI (2018), 'Terms of Reference: EITI systematic disclosure feasibility study'. https://eiti.org/document/terms-of-reference-eiti-systematic-disclosure-feasibility-study
[4] See further guidance on systematic disclosures: https://eiti.org/systematic-disclosure

There is "no need to reinvent the wheel". The MSG should **examine national policies and standards on open government and open data, and their alignment with international best practices.** This helps ensure that the MSG's work reinforces existing efforts, not duplicating existing ones.

Relevant national policies may include relevant constitutional provisions, government legislation or policies on open government and open data, related legislation such as Freedom of Information Acts (FOIAs), and commitments made through other initiatives, such as the Open Government Partnership (OGP) and the Joint Organisations Data Initiative (JODI). These provide well-established platforms for pursuing open data policies and disclosures. The OGP's Open Government Declaration, for example, explicitly references a commitment to pro-active disclosure by government, and also specifies that disclosure of information is to be conducted in open data or machine-readable formats (see Figure 1 below).

Figure 1: Screenshot of the Open Government Declaration[5]

With regards to the second aspect, when EITI is the primary disclosure mechanism, it is necessary to consider whether information collected through EITI reporting is sufficiently accessible and develop a policy to improve on public access. At the national level, a survey by the EITI International Secretariat[6] noted that most EITI data continues to be "locked" in pdf reports that are difficult to use. At the international level, since the introduction of EITI Summary data, open data coverage has steadiliy improved and reached a coverage of 90% in 2019. These are available through the International Secretariat's API[7] or website.[8]

Addressing **regularity, timeliness, and methods of release** are all important aspects of open data policies, and could e.g. include objectives for timeliness by setting minimum deadlines for the release of data. **Annex B** includes an extensive list of open data examples, policies and tools.

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[5] Open Government Partnership (2011), 'Open Government Declaration'. http://www.opengovpartnership.org/about/open-government-declaration
[6] EITI (2017), 'Survey on open data in EITI implementing countries'. https://eiti.org/blog/survey-on-open-data-in-eiti-implementing-countries
[7] EITI (2019), 'EITI's API documentation'. https://api.eiti.org/
[8] EITI (2019), 'EITI Summary data'. https://eiti.org/summary-data

MSGs can draw from existing practices, such as the guidelines for open data of the Filipino government[9] (see Figure 1). The German EITI and former USEITI provided the building blocks of their websites, the source-code, open for reuse on GitHub.[10,11] The EITI International Secretariat also provides the source-code used for EITI.org.[12] GitHub allows whoever is interested to look into the source-code providing the framework for EITI's data portal, and to use the code if they wish.

Figure 1: Guidelines on Open Data Implementation

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[9] Republic of the Philippines (2015), 'Guidelines on Open Data Implementation: JMC no. 2015-01'. http://data.gov.ph/guidelines-on-open-data-implementation-jmc-no-2015-01/
[10] D-EITI (2016), 'DOI Extractives Data'. https://github.com/b2k-media/doi-extractives-data
[11] U.S. Office of Natural Resources Revenue (2019), 'DOI Extractives Data'. https://github.com/18F/doi-extractives-data/
[12] EITI (2016), 'EITI GitHub repository'. https://github.com/EITIorg.

Step 2: Legal openness: Choosing open licenses

The open data policy should clarify the procedures for the release of data, including provisions on the terms of data use. The table below shows the different types of open licenses commonly associated with open data. It shows the various sharing-levels associated with different licenses.

Table: Open licenses[13]		
Sharing-level of Licence	Creative Commons License	Open Data Commons License
Public Domain	CC0	PDDL
Attribution	CC-by	ODC-by
Attribution & Share-Alike	CC-by-SA	ODbL

Public domain licenses mean that the data in question is free of any copyright and the publisher(s) waive any rights towards the data. In this case, the users are free to: (i) copy and distribute the data; (ii) produce new works using the data; and (iii) modify, adapt and build upon the data.

Users can, in this instance opt out of copyright and data protection-licenses if they choose to re-use or re-publish the data. This means users are not obligated to cite the source of the data. **Attribution** licenses, includes all the characteristics of public domain-licenses, with the only additional restriction that the source of the data must be cited, and that any notices accompanying the publication must be kept intact. Lastly, **attribution & share-alike** licenses include the same rights and restrictions as the two preceeding types, but new works must be published under the same license as the source, and can only be published in 'locked' formats if a copy is published alongside in an open format. An alternative to these standard open licenses is to **create a custom license**, like the United Kingdom.[14]

The above alternatives should, alongside assessments of current national priorities and policies, be brought to the attention of and discussed by the MSG for subsequent decision. Open licenses do not require registration in order to be used, only a statement on the website or publications, including the name of the license, with a link to the relevant explanation. An example is provided to the right from the Creative Commons' website. [15]

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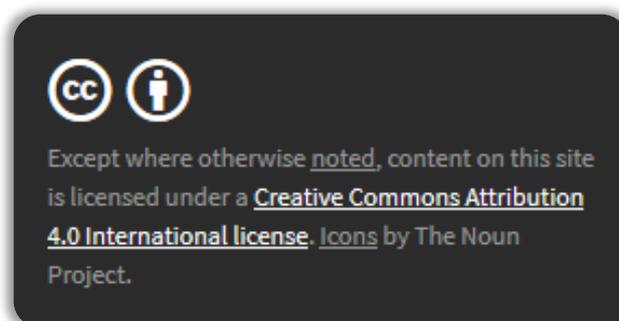
13 OpenDefinition (n.d.), 'Guide to Open Data Licensing'. https://opendefinition.org/guide/data/
14 United Kingdom, 'Open Government Licence for public sector information'.
https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/
15 Creative Commons (n.d.), 'HomePage'. https://creativecommons.org/

Step 3: Degree of openness: Removing technical barriers

MSGs should agree on the most effective way to publish data based on the profile, resources, and technology of its data users. When feasible, MSGs may opt to craft policies that are specific to certain types of users, e.g. media, academia, parliament, local communities, etc. The USEITI, for example, undertook extensive consultations with likely users of EITI data as a key first step in developing their EITI data portal. While the United States no longer implements the EITI, the platform is still being used by the Department of the Interior.

Once the MSG has determined the users needs and capacity, it may chose which degree(s) of openness would be relevant for the disclosures of the data. **The EITI Standard requires publication of EITI data in Excel format at minimum.** EITI data refers to all tables, charts and figures associated with EITI reporting. Submission of summary data according to the Board-approved template[16] is also required, increasingly making use of data standardisation.

Further, the EITI Standard **expects** that **government agencies and companies to publish EITI data under open licenses,** and **encourages national secretariats and MSGs to systematically disclose machine-readable and interoperable data.** By using the 5-star figure introduced previously, the requirements of the Standard can be identified as below (for descriptions of the various levels, see Annex A):
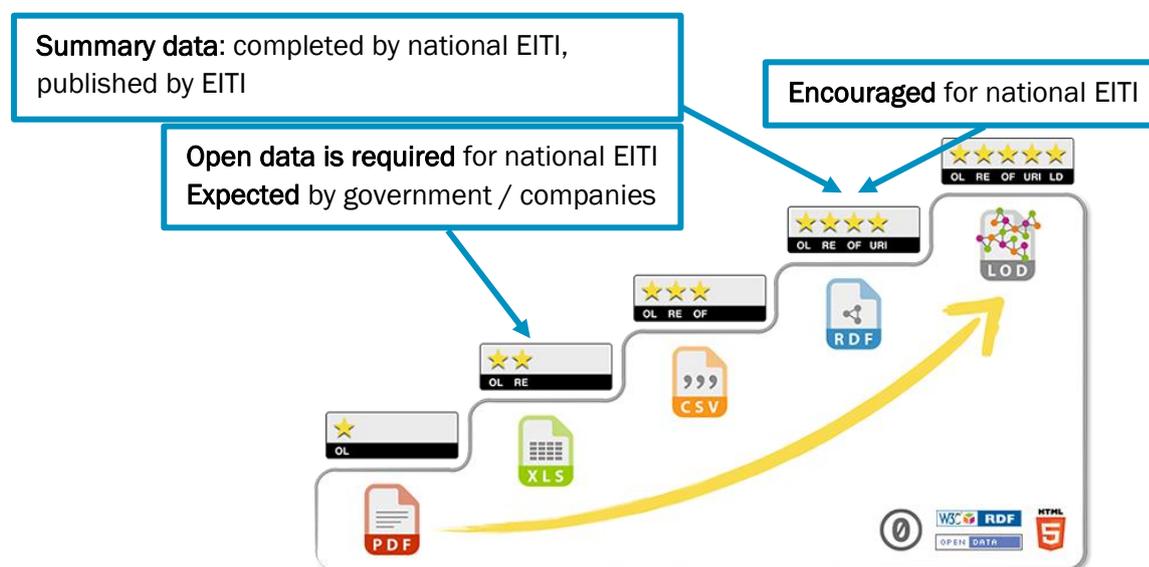
Demand driven EITI data in the United States

"If we focused just on the requirements, and not what the users wanted to see from it there would be a disconnect. Therefore, we spent a lot of time with users and included them in the design process. This helped us to answer the questions that people actually wanted to know."
– Paul Mussenden, former USEITI team

The USEITI undertook extensive stakeholder consultation before developing their EITI data portal. This enabled USEITI to identify the data-points and types of visualisations that were in the highest demand. They also considered definitions and explanations of terms that would be useful for less experienced users.

This is commonly referred to as **user-, or demand-driven data.** It focusses on identifying likely user groups and mapping their needs. USEITI also allows for continuous feedback.

This led to a broader push for using the website as a source for USEITI's reporting. As a result, the EITI Report was a short document including information of methodology and key facts, and outcomes of the reconciliation process. The detailed data was available through a portal.

For more information or to visit the US Department of the Interior's data portal, visit https://revenuedata.doi.gov/explore/.
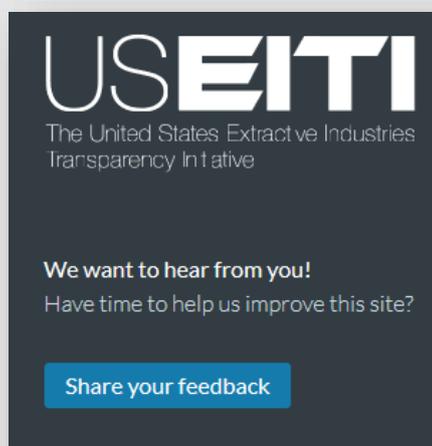
The degree of openness of data largely hinges on its interoperability with other information or datasets. EITI Requirements require open data disclosures in the form of Excel or csv-files, meeting the minimum of open data definitions. Using the five-star framework of Annex A, RDF- and LOD-files are examples of more flexible open data formats, in which data-points may be embedded in websites and are linkable to other datasets. More flexible options enable users of data to constantly have the most updated data available.

MSGs and national secretariats should therefore ensure they are aware of the relevant data standards used by various reporting entities in the country, such as national budget codes and classficiations, economic activity codes for companies and sectors, HS Commodity Codes[17] for production and export data, System of National Accounts[18] for macroeconomic statistics, Global Legal Entity Identifiers[19] for government and corporate entities, as well as other standards. MSGs are free to explore different standards than described in this guidance. Additionally, although the leap towards RDF or LOD-files may not be immediately realistic, MSGs should keep these in mind as they greatly improve data access and reduce time spent on data collection. Such data formats are highly relevant for the future of mainstreaming EITI disclosures, and the EITI Board expects that MSGs develop workplans for systematically disclosing EITI data within a five-year period.[20]

Data standards

Using data standards means that data is published using a standard methodology. For numbers, this means a consistent use of calculations or categorisation.

To categorise **revenue streams**, a data standard has been developed in collaboration with the International Monetary Fund (IMF). This classification uses the Government Finance Statistics (GFS) Manual 2014, which is already used by most finance ministries for international reporting. Guidance on how to use the framework is available as *Technical notes*, which have been drafted by the IMF in consultation with the EITI International Secretariat.

For **text-based data**, other forms of standardisation may be needed, like codes: for country names, the EITI International Secretariat uses ISO 3166, a widely used country codes.

For more details on how the EITI International Secretariat uses data standards for *summary data*, please see the links and descritions provided via https://eiti.org/data

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[17] United Nations (2017), 'Harmonized Commodity Description and Coding Systems (HS)'. https://unstats.un.org/unsd/tradekb/Knowledgebase/50018/Harmonized-Commodity-Description-and-Coding-Systems-HS
[18] United Nations (2008), 'The System of National Accounts'. https://unstats.un.org/unsd/nationalaccount/sna.asp
[19] Global Legal Identifier Foundation (n.d.), 'ISO17442: The LEI Code Structure'. https://www.gleif.org/en/about-lei/iso-17442-the-lei-code-structure#
[20] EITI (2018), 'EITI Board Decision 2018-8: The Board agreed on recommendations on systematic disclosures'. https://eiti.org/BD/2018-8

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Step 4: Drafting the open data policy

According to the steps outlined above, MSGs should agree a written statement outlining their policy on access, release and re-use of EITI data. In the event of adopting a wider national policy, an MSG statement of endorsement may be used. Examples of existing policies are available [here](). Below is model language drawn from the EITI open data policy[21] which can guide MSGs in the drafting of their own policies:

"The multi-stakeholder group of [country] commits to publication of information that is provided in accessible formats such as Excel and CSV files [or more sophisticated solutions], to be published through [identify platforms] on a [semi-annual/quarterly] basis, which may be freely used or re-used according to [identify license]."

The MSG may also wish to consider additional points: *"The multi-stakeholder group commits to …"*

- *"… systematic publication of open data by embedding open data policies and strategies in reporting entities involved in EITI reporting to ensure timely and quality data, accessibility and cost effectiveness of data delivery."*

- *"… working with users to identify priority data sets and the form of data delivery."*

- *"… consider user needs and access of different gender, ethnic and geographic users."*

- *"… ensure that data are provided in granular, machine-readable formats and fully described, so users have sufficient information of strengths, weaknesses, analytical limitations and security requirements, as well as how to process the data."*

- *"… release data as early as possible, allowing users to provide feedback, and continue to make revisions to ensure the highest standards of open data quality."*

- *"… share technical expertise and experience with other countries to maximise the potential of open data in a socially inclusive manner."*

- *"… work to increase open data literacy and encourage people, such as developers of applications and civil society organisations, to unlock the value of open data."*

- *"… ensure that data is interoperable with national and international standards, including adopting data standards such as [list of data standards to be used in publication] and additional guidance provided by the EITI International Secretariat."*

- *"… where possible support the cross-referencing of data with other datasets by using unique, persistent and public identifiers for commercial and government entities."*

- *"… consider the technical infrastructure to deliver and use the open data."*

- *"… consider the governance and sustainability of open data policies as to ensure that reporting entities have a data steward, data is retained, and security standards are in place."*

Once plans and policies are in place, a data champion and/or data coordinator should be appointed with the mandate to review and update open data disclosures regularly (quarterly or semi-annually).

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[21] EITI (2019), 'Open data policy'. https://eiti.org/document/eiti-open-data-policy

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Open data policy checklist

Step 1 – Accessibility of data required by the EITI

- Consider and reference national open data policies.

- Consider and reference government and corporate open data publications.

- Identify improvements to open data disclosures of EITI data.

Step 2 – Legal openness

- Consider terms of data use/licenses: Public domain, Attribution, or Attribution & Share-Alike.

- Consider developing a custom license.

Step 3 – Degree of openness

- Assess users' profile, resources and technological capabilities.

- Based on users' profile, identify forms of public access: publication through Excel, csv or other open formats.

- Identify the data standards to be used for publication, by considering relevant data standards and classifications used by governments and companies: e.g. Harmonised system commodity codes, System of National Accounts (ISIC rev.4), Government finance statistics or national budget classification, Legal entity identifiers (for companies), Government entity codes, or others.

- Consider data/information exchange between EITI and existing government/corporate portals.

Step 4 – Drafting the open data policy

- Documenting the MSG's choices on access, release and re-use of EITI data.

- Consider including additional points recommended in this guidance note.

Monitoring and implementation

- Appoint a data champion or coordinator with the mandate to review and update open data disclosures regularly (quarterly or semi-annually)

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3.   Part II: Implementing the policy: Create and publish data

This section provides guidance on what MSGs could consider when implementing their open data policiesdrawing on examples from EITI countries.

EITI implementing countries publish tables, charts and figures ("data") as well as narrative text on countries' extractive industries. The 2019 EITI Standard emphasises that data should be publicly accessible, and expects that countries take steps to integrate publication of open data in company and government systems. The sections below describe three levels of sophistication in publishing extractive industries data, ranging from the most basic – Excel and standardised data files – to automated and mainstreamed examples.

The EITI Standard already requires the MSGs to:

1. Make the data available in an open data format online and publicise its availability. Open data format means that data can be made accessible in CSV or Excel format and could contain all tables, charts and figures from EITI Reports. (Requirement 7.2.b)

2. Complete summary data files for each fiscal year covered by the EITI in accordance with the template approved by the EITI Board. (Requirement 7.2.c)

In cases where the MSG hires an Independent Administrator to undertake parts of the reporting process, phase 5.3 and 5.4 of the "Standard Terms of Reference for Independent Administrators" requires the creation and delivery of the same open data products.[22]

Level 1: Producing and publishing electronic data files

The 2019 EITI Standard requires production of machine-readable files that can be published alongside any print/pdf version of EITI reporting. **In practice this means that the MSG must ensure that CSV or Microsoft Excel files are created, containing all tables and charts used in EITI reporting**. National secretariats and MSGs should ensure that these files are made available for

Dominican Republic

For the Dominican Republic, the EITI website *is* the EITI Report: Instead of producing large physical copies of EITI Reports, all the necessary disclosures are made online as the default, while a reconciliation report is published as an attachment.

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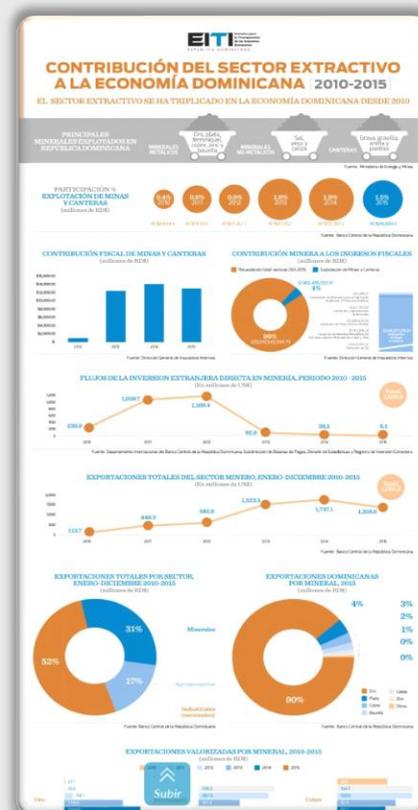
[22] EITI (n.d.), 'Standard Terms of Reference for Independent Administrator Services'. https://eiti.org/TOR-IA

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download through their own websites, alongside any non-open data publications. In practice, this could be as simple as publishing tables from reports in an excel file. See annex B for specific examples.

Level 2: Data standardisation and EITI Summary data

The next stage of data publication aims to ensure that **data is interoperable and standardised**. As described in Part I, it is important to consider data standards as one develop reporting templates for publication, to ensure that a standard methodology is adopted already at the data creation stage. This helps improve data relevance and use, as data can be combined with other datasets using similar or related standards.

As an example, the EITI recently launched a Board-approved **Summary data template, a tool to publish interoperable and standardised EITI data**. National secretariats and MSGs are required to submit one file for each fiscal year to the International Secretariat alongside EITI reports.The template can be found at https://eiti.org/summary-data-template, and is used to generate various sets of standardised data. As an example, below is a figure presenting the revenues of the Democratic Republic of Congo, using the GFS classification of national revenue streams.

Figure 2: Revenue profile of Democratic Republic of Congo using GFS classification
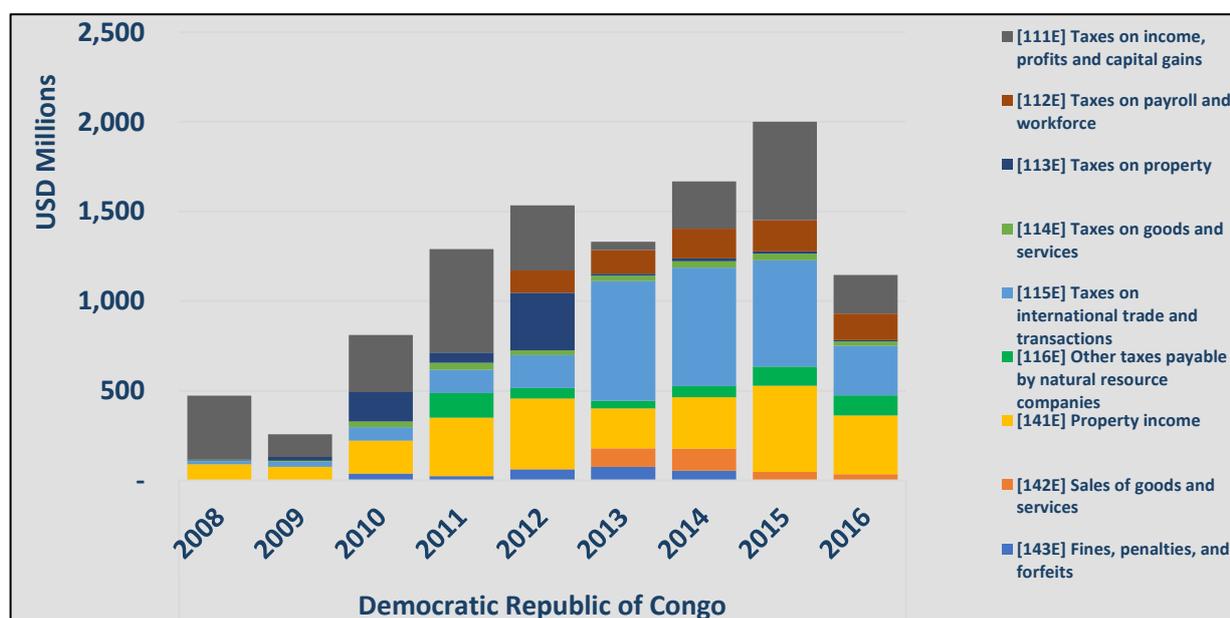
Source: EITI Total revenues by GFS, using Summary data. Available at:
https://eiti.org/files/document/190313apiquerytotalrevenuesbygfsxlsx

Additionally, Figure 4 combines EITI data with World Bank demographic data. It presents the contribution of the extractive sector per citizen in government revenues, exports and GDP.[23].

Summary data files are used to facilitate analysis by extractive data users and function as an international reporting template for EITI's global database. It is accessible through an API, or Application Programming Interface, using a JSON programming language.[24] An API enables other users to link their data with realtime updates. The EITI also provides guidance for advanced users on how to access the database.[25]

However, so far EITI's API is not linked with other useful data sources such as the World Bank's Databank[26], IMF's datapages[27], nor UN Statistics Database[28] directly. Therefore, the EITI has not yet reached the final level of openness described in Annex A; linked open data.

Figure 3: Extractive sector contribution to the economy per capita (2015)

Source: EITI Economic contribution per capita, based on Summary data. Available at: https://eiti.org/files/document/191114economiccontributionpercapitaxlsx

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[23] EITI (2019), 'Economic contribution of the extractive sector per capita'. https://eiti.org/files/document/191114economiccontributionpercapitaxlsx
[24] EITI (2019), 'EITI API database'. https://eiti.org/api/
[25] EITI (2019), 'EITI API documentation'. https://api.eiti.org/
[26] World Bank (n.d.), 'World Bank Databank'.
[27] IMF (n.d.), 'IMF Data'. https://www.imf.org/en/Data#data
[28] United Nations (n.d.), 'UN Data'. http://data.un.org/

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Level 3: Linked open data and systematic disclosures

The 2019 EITI Standard[29] includes several provisions that encourage and enable mainstreaming, including:

- The broad definition of "EITI Report" in the 2019 Standard: *"The data [required by the EITI] can be disclosed in the form of an EITI Report, or constitute publicly available information and data gathered or cross-referenced as part of the EITI process."*

- The default expectation is that government and corporate entities systematically disclose data in open formats, and several provisions explicitly encourage routine disclosure of data, e.g., Requirement 4.1 on Comprehensive financial reporting: *"The expectation is that implementing countries will disclose the requisite information through routine government and corporate reporting (websites, annual reports, etc.), with EITI Reports used to collate this information and address any concerns about gaps and data quality."*

While most implementing countries have embraced some aspects of mainstreaming, especially with respect to contextual information relating to licensing, contract transparency, production and export data, many countries face challenges with "full systematic disclosure", i.e., routine disclosure of all the data required by the EITI Standard in requisite detail. A common challenge in the **Latin American and Caribbean** region, for example, lies in confidentiality or privacy provisions that require a company waiver before government agencies can disclose company-specific data. These challenges may necessitate legal review or reforms. In **Indonesia**, there are numerous government platforms. Each agency seems to have at least one outwards facing data portal for public access to information, such as the Minerba One Data (MODI) [30] of the extractice sector regulator versus their internal reporting system Minerba Online Monitoring System (MOMS).[31] While these two systems might speak to oneanother, the priority is to ensure the databases are linked to other government agencies' systems[32], and Indonesia EITI's own portal.[33].

All implementing countries are expected to develop a costed work plan for 2019 and onwards that includes steps to mainstream EITI implementation in company and government systems within 3-5 years. **The MSG is encouraged to ensure that systematic disclosures adhere to the open data policy of the MSG, or wider government policies. The MSG should also ensure that systematic disclosures adhere to the publication of the required data and at the required level of disaggregation.** For examples of systematically disclosed data, see Annex B or check https://eiti.org/systematic-disclosure.

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[29] EITI (2019), 'EITI Standard 2019'. https://eiti.org/document/standard
[30] Kementarian Energi dan Sumber Daya Mineral (2019), 'Minerba One Data (MODI)'. https://modi.minerba.esdm.go.id/pimpinan
[31] Kementarian Energi dan Sumber Daya Mineral (2019), 'Minerba Online Monitoring System (MOMS)'. https://moms.esdm.go.id
[32] Government of Indonesia (2019), 'Satu Data Indonesia'. https://data.go.id/toolkit
[33] Indoensia EITI (2019), 'EI Data Portal'. http://portal-ekstraktif.ekon.go.id/

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Annex A: Degrees of openness

The below box attempts to further describe the various levels of open format publication, using the scale developed by 5-Star Open Data.

Not open data

PDF files are not open data files, as they are not structured information and therefore cannot be modified freely enough. However, PDFs can still be published under **open licenses** (**OL**), which is the first step towards open data disclosures. For EITI purposes, this is not sufficient to satisfy open data requirements.

Open data

Excel files are the the most basic open data files in the figure. For many this is surprising, but excel files require users to obtain specific software (Microsoft Excel), a barrier to user accessibility.

Still, excel is considered open data as it presents data in a structured way i.e. tabular or **machine readable** (**RE**). Users can easily identify and modify the information to suit their specific needs.

CSV is the next step of open data which, similarly to excel files, presents data in a structured way. Columns are no longer defined by the software, but instead values are separated by commas. This means such files use open formats (**OF**) that most programmes can read.

RDF (Resource Description Framework) files represent the next stage in open data; these are machine readable files which define data-points, by also linking them with descriptions of data and defining how data is presented. It provides a unique resource identifier (**URI**) which enables interoperability and lays the foundation for linking open data. EITI's API documentation page[34] describes what EITI data is available, identifies the type of data, and provides an overview of the data structure.

LOD, or linked open data (**LD**), means that web-based data is combined with other RDF type data. This form of open data is how open data files are related to *mainstreaming* or *systematic disclosure* of EITI data. It means data is not necessarily held by websites or publications themselves, but is pulled from other sources using similar data standards.

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[34] EITI (2019), 'EITI API Documentation'. https://api.eiti.org

Openness example: Norwegian Petroleum

To provide an example of the different degrees of openness, we use the NorwegianPetroleum platform.[35] It works as a public information outlet for the Norwegian Petroleum Directorate, and combines all of the above forms of disclosures. Its webpages combine **narratives** (non-structured text under an open license – level 1 - OL) as well as lists and tables (see figure on the right).

The lists and tables serve as access-points for more detailed information on specific fields and links to additional resources and maps, some of which are in open data formats. Most of the lists and tables can be downloaded in **excel** format, or as **CSV** (Level 2 to 3 – RE and OF).

The maps are not only interactive, providing multiple layers of information (see figure on the left), but also use **data standards** to combine geographical and information such as reserves and values.

In terms of data linkage, the data is in effect pulled (or 'queried') from the Norwegian Petroleum Directorates own 'Factpages'.[36] This means that the data is **linked** to the government agency holding and managing the information, providing direct access to the source of the information (see figures below).
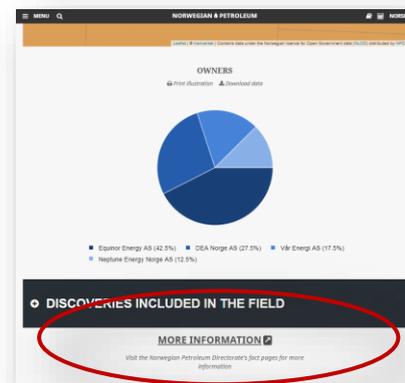
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[35] Norwegian Petroleum Directorate (2019), 'NorwegianPetroleum.no'. https://www.norskpetroleum.no/en
[36] Norwegian Petroleum Directorate (2019), 'Factpages'. http://factpages.npd.no/factpages/

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Annex B: Examples of data publications

## Level 1: Examples of simple open data publications

Several EITI countries are publishing data files using Excel formats. Below are three examples from the Philippintes, United Kingdom, and Zambia. The International Secretariat may be consulted for additional examples, or see the EITI website: https://eiti.org/data.
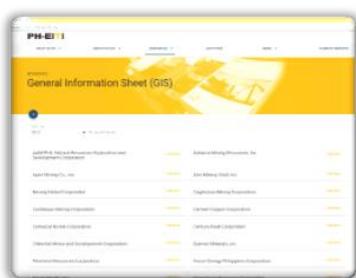
The **Philippines** provides a variety of solutions on their website[37], which are fairly advanced. However, they also incorporate simpler disclosures; PH-EITI makes Excel files available on a continuous basis. As companies and government agencies submit reporting templates to PH-EITI, they make these Excel files available on their website.[38]
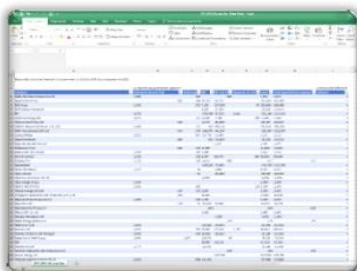
The **United Kingdom** publishes Excel files on government websites[39] with data contained in their EITI Reports, the latest for FY2017 at the time of writing. It is a great example of simple publications for effectively providing EITI data to the public and other interested parties.
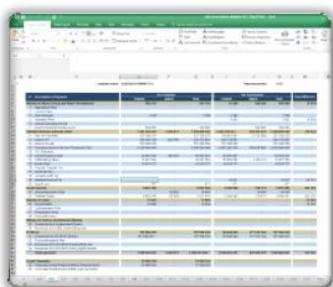
Zambia EITI (ZEITI) recently began publishing production data based on a government reporting system, which contains much timelier data (up to March 2019).[40] This is an example of publishing Excel files containing the latest information available, combining the data with figures from Zambia's EITI Reports.

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[37] Philippines EITI (2019), 'PH-EITI.org'. http://www.ph-eiti.org/
[38] Philippines EITI (2019), 'General Information Sheets'. https://www.ph-eiti.org/Resources/#/GIS
[39] Department for Business, Energy & Industrial Strategy (2019), 'Extractive Industries Transparency Initiative: payments report, 2017'. https://www.gov.uk/government/publications/extractive-industries-transparency-initiative-payments-report-2017
[40] Zambia EITI (2019), 'Documents/Publications'. http://zambiaeiti.org/zeiti-publications/

Level 2: Examples of interoperable and standardised data

Germany (D-EITI) published their EITI Report entirely on an interactive data portal.[41] It provides contextual information on resource extraction, legal frameworks, revenues and innovative topics such as the environment and subsidies. The data of the reconciliation report is visualized.

It was designed to raise interest of the public and the content can be shared directly through social media. All information is available for download in open data formats. The portal is built on the previous code provided by US-EITI and is available in both German and English. The source code is shared on Github[42] and its bilingual feature can be adapted to any language.

Mongolia's portal[43] covers revenue receipts and payments and their portal has enabled consistent and timely disclosure of revenue-data for more than 1000 companies operating in the country.

The data portal contains data on licenses - including geographical and spatial information - as well as production volumes and values. Users can choose whether the information is presented by company, license or district. All the information is available for download in open data formats such as Excel, CSV or JSON files. The financial data uses national budget classifications, while license and contract data are presented using unique numeric identifiers.

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[41] D-EITI (2017), 'Resource Extraction'. http://www.rohstofftransparenz.de/
[42] http://github.com/pfeffermind/doi-extractives-data
[43] Mongolia EITI (2019), 'EITIM E-Reporting System'. https://e-reporting.eitimongolia.mn/

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Level 3: Examples of systematic disclosures by governments and companies

License registries and cadastres

Some online solutions facilitate EITI disclosures, especially if integrated into government agencies and properly updated and used. **Sierra Leone** began using a centralised cadastre system which lists the largest mining companies[44], linking unique companies to licenses and all payments directly related to the same licenses. Although this does not cover all payments and receipts covered by EITI reconciliation, it is a significant step towards transparency being the default feature of government systems.

Automated disclosures of revenues

Kazakhstan and **Mongolia**[45] have created or incorporated EITI disclosures into online platforms through which extractive companies upload their data alongside their audited financial statements.

In **Kazakhstan,** the EGSU portal[46] (only in Russian/Kazakh) has enabled them to publish the most timely EITI data each year since its completion in 2014. EITI reporting is incorporated into the online platform under the Ministry of Investment and Development. After undertaking an annual independent audit in the first quarter of a calendar year, companies upload EITI data together with their audit statements. This revenue data is even used and presented on several government websites. All contracts are available on the EGSU portal, but not open to public. The government is therefore considering next steps to transitioning to mainstreamed EITI disclosures.

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44 National Minerals Agency (2018), 'GoSL Online Repository'. https://sierraleone.revenuedev.org/
45 Mongolia EITI (n.d.), 'EITIM E-Reporting System'. http://e-reporting.eitimongolia.mn/
46 Ministry of Investment and Development (2014), 'Unified State System of Subsoil Use Management of the Republic of Kazakhstan'. http://egsu.energo.gov.kz/webapp/pages/home.jsf

Other open data examples

Democratic Republic of Congo, 'Données ITIE', http://itie-rdc.masiavuvu.fr/donnees-itie/

Ghana EITI, 'Ghana Extractives Dashboard', http://data.gheiti.gov.gh/#home

Government of **Sierra Leone**, 'GoSL Online Repository', https://sierraleone.revenuedev.org/

EITI, 'Open EITI Data', https://eiti.org/data

EITI **Indonesia**, 'EITI Indonesia data portal', http://eiti.ekon.go.id/

Kazakhstan EITI, 'Online EITI data portal', http://egsu.energo.gov.kz/webapp/pages/home.jsf (available in Kazakh or Russian only)

Mongolia EITI, 'EITIM E-Reporting System', http://e-reporting.eitimongolia.mn/

Norwegian EITI, 'Norwegian Petroleum', http://www.norskpetroleum.no/en/

Sénégal ITIE, 'Statistique Hydrocarbures', http://itie.sn/statistiques-hydrocarbures/

United States Department of the Interior, 'U.S. Department of the Interior Natural Resources Revenue Data', https://revenuedata.doi.gov/explore/

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Annex C: Further readings and resources

Open data policies and licenses

EITI, 'The EITI Open Data Policy', https://eiti.org/standard/open-data-policy

EITI, 'Open data policies of implementing countries',
https://eiti.org/publications?search_api_views_fulltext=&field_doc_type_public=5541&field_doc_pub
lisher=&field_doc_published_date%5Bmonth%5D=&field_doc_published_date%5Byear%5D=&field_d
oc_published_date_1%5Bmonth%5D=&field_doc_published_date_1%5Byear%5D=

G8 members, 'G8 Open Data Charter and Technical Annex',
https://www.gov.uk/government/publications/open-data-charter/g8-open-data-charter-and-technical-
annex

Open Data Institute, 'Publisher's Guide to Open Data Licensing', https://theodi.org/guides/publishers-
guide-open-data-licensing

Open Data Charter, 'Open Data Charter', http://opendatacharter.net/

Open Government Partnership, 'Open Government Declaration',
http://www.opengovpartnership.org/about/open-government-declaration

Republic of the Philippines, 'Guidelines on Open Data Implementation: JMC no. 2015-01',
http://data.gov.ph/guidelines-on-open-data-implementation-jmc-no-2015-01/

5-Star Open Data, '5-Star Open Data', https://5stardata.info/en/

ODI Training Team, 'European Data Portal e-learning programme'
https://www.europeandataportal.eu/elearning/en/#/id/co-01. Available in English, French, Spanish
(and other European languages).

GovLab, 'Open Data's Impact'. http://odimpact.org/. Containing case studies on how open data is
tackling corruption and increasing transparency, and enhancing public services and resource
allocation.

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Data standards

International Monetary Fund, 'Government Finance Statistics Manual 2014 – GFS', https://www.imf.org/external/np/sta/gfsm/

International Monetary Fund, 'Guide to Analyze Natural Resources in the National Accounts', http://www.imf.org/external/pubs/ft/qna/na.htm

International Organization for Standardization, 'ISO 4217 – Currency codes'. https://www.iso.org/iso-4217-currency-codes.html

Global Legal Identifier Foundation, 'ISO17442: The LEI Code Structure'. https://www.gleif.org/en/about-lei/iso-17442-the-lei-code-structure#

International Organization for Standardization, 'ISO 3166 Country Codes'. https://www.iso.org/iso-3166-country-codes.html

Joined-up Data Standards, 'Alphabetic index of data standards', http://joinedupdata.org/#data_standards_index

SNL Financial, 'Options for Data Reporting - EITI Standard 2016', http://documents.worldbank.org/curated/en/793601469102170609/Options-for-data-reporting-EITI-standard-2016-the-good-the-better-and-the-best

United Nations, 'Harmonized Commodity Description and Coding Systems (HS)'. https://unstats.un.org/unsd/tradekb/Knowledgebase/50018/Harmonized-Commodity-Description-and-Coding-Systems-HS

United National Statistics Division, 'Classification of the Functions of Government – COFOG', http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=4

United National Statistics Division, 'International Standard Industrial Classification of All Economic Activities, Rev.4 – ISIC', http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27

United Nations Statistics Division, 'The System of National Accounts – SNA', http://unstats.un.org/unsd/nationalaccount/sna.asp

Resources for mainstreaming/systematic disclosures

EITI, 'Encouraging systematic disclosure', https://eiti.org/document/encouraging-systematic-disclosure

EITI, 'Mainstreaming mapping exercise', https://eiti.org/document/mainstreaming-mapping-exercise

EITI, 'Systematic disclosure webpage', https://eiti.org/systematic-disclosure

Annex D: Recommended actions for EITI work plans

In implementing the EITI Open data policy (https://eiti.org/document/eiti-open-data-policy), the following action points could be agreed by MSGs and reflected in their work plan.

Recommendations	Possible actions
Orient government and corporate systems towards open data by default	• Commission feasibility studies and/or recommend reforms to promote systematic disclosure of data by companies and government agencies • Secure political commitment • Propose regulations for agencies to adopt open data systems • Identify an open data champion in relevant government agencies • Endorse or clarify national policies on open data in EITI Reports • Discuss constraints and barriers to adopting open data standards
Ensure that the data are fully described, so that users have sufficient information to understand their strengths, weaknesses, analytical limitations, and security requirements, as well as how to process the data	• Evaluate current procedures for ensuring data quality and provide recommendations in case of gaps • Address open data issues in the Independent Administrator's Terms of Reference. • Conduct capacity building activities on how to process and analyse data
Release data as early as possible, allow users to provide feedback, and then continue to make revisions to ensure the highest standards of open data quality	• Agree on mechanisms for real time or up-to date release of data • Publish Excel files on the EITI website.
Release data under an open license that allows users to freely obtain and easily re-use it	• Examine whether there are existing restrictions to the use of data. • Identify constraints to the use of open license and provide recommendations to resolve them • Task the Independent Administrator to produce Excel files, alongside compiling Summary Data Templates
Share technical expertise and experience with other countries to maximise the potential of open data	• Conduct capacity building activities to improve data literacy and understanding open data principles
Work to increase open data literacy and encourage people, such as developers of applications and civil society organisations that work in the field of open data promotion, to unlock the value of open data	• Conduct capacity building activities to improve data literacy and understanding open data principles • Perform user surveys examining the needs of different user-groups

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Ensure that data is interoperable with national and international standards including adopting data standards approved by the EITI Board and additional guidance provided by the EITI secretariat	• Examine current and previous ways of disclosing data adopted by government agencies and provide recommendations on how to make them interoperable across agencies • Evaluate current data and, where applicable, ensure they are classified according to GFS systems
Use unique identifiers to link data across years of reporting or different sources	• Examine current and previous ways of disclosing data adopted by government agencies and provide recommendations on how to make them interoperable across time, for example by using Tax Identification Numbers (TINs) or business identifiers for companies.
Provide data in granular, machine-readable formats	• Agree on level of disaggregation for all EITI data • Include in the IA's ToR provisions on publishing data in machine readable formats and data granularity.

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