

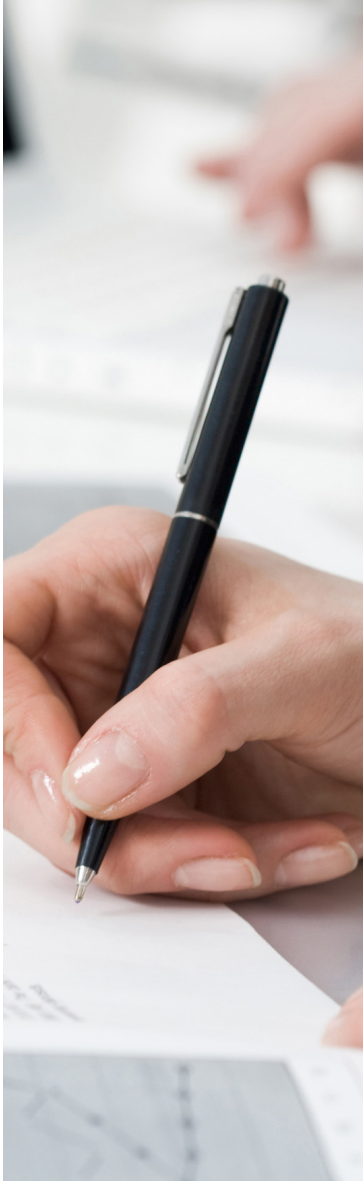

Scoping Study for EITI Data Reporting and Access Standards

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Brief

This scoping study was commissioned to review data formats and recommend standards and bench marks for data output required under the Extractive Industries Transparency Initiative (EITI) Standard.

This report has been drafted by a team led by Masuma Farooki, with contributions from Glen Jones, Peter Godwin, Tiffany Steel and Alexander Malden.

The team would like to acknowledge valuable input from Martin Lokanc, Andrew Brian Schloeffel and Sridar Padmanabhan Kannan at the World Bank and Anders Tunold Kråkenes and Sam Bartlett at the EITI Secretariat Oslo.

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Executive Summary

The Extractive Industries Transparency Initiative (EITI) is an international standard to 'promote open and accountable management of natural resources'. By encouraging governments, extractive companies, civil society and the public to engage in discourse around transparency of the extractive sector, it aims to facilitate the management of a country's natural resource wealth to benefit all its citizens.

To facilitate the utilization of the rich data generated by a country's EITI process, this report provides recommendations to facilitate EITI stakeholders in reporting data (qualitative and quantitative) in a standardized format to allow for improved understanding, analysis and accountability of the extractive sector.

The data output standards presented here are recommendations only and are not meant to be prescriptive. Nor should they be considered as a 'reporting template'. The decision on reporting remains the domain of the individual country's Multi Stakeholder group.

These options and recommendations are proposed by the research team. They are not sanctioned by the EITI nor the World Bank, and following them will not necessarily lead to EITI compliance. Implementers of the EITI are advised to review the 'EITI Standard' and guidance notes for assistance on following the 'EITI Requirements'.

This report provides options and recommendations for data output for EITI Requirements listed under the EITI Standard. These recommendations are based on identifying data categories under each Requirement and spell out qualitative and quantitative data formats for each category. Where international standards are available and where these are emerging, the report uses these as its basis of recommendations. The recommendations for data outputs are meant to compliment the narrative provided within the 'Country Report' and is not to be considered a replacement for other reporting requirements under the EITI.

The member countries and extractive companies that are signatories to and participants of the EITI, cover a wide range of capabilities and resources. The capacity at the government and extractive company level to provide information differs, as well for civil society and community partner. To facilitate data reporting from each group, this report takes a good, better and best approach to data standards. These are classifications developed by the research team and do not pertain to EITI compliance.

The approach allows three levels of recommendations to be made; the good focuses on meeting the minimum requisites set by each EITI Requirement; better and best approaches building further on the basic standards. As EITI is an evolving process, the better and best approaches are meant to encourage participants to standardize reporting where increased information and data commitments are being made by the multi stakeholder group. The three levels of recommendations should not be seen as a three tier reporting system.

'Good' refers to reporting standards that meet the minimum data output to be provided under each EITI Requirement. The recommendations take into consideration differing capacity for stakeholders and include data formats that are already in common usage in different EITI Country Reports.

'Better' refers to reporting standards that are enhancements of data output covered under the good category. These recommendations differ by EITI Requirement; in some cases they provide standards for more disaggregated reporting within a data category and in others they refer to more details being provided for each category. In some cases, there may be just one standard that is considered suitable and therefore no differentiation will be made between the different levels of recommendations.

'Best' refers to reporting standards that represent the highest international benchmarks and standards and are considered to provide comprehensive information, beyond the minimum data requirements. International standards are still evolving for some data categories, and the recommendations reflect evolving trends rather than set standards.

The objective of this report is to present, in structured form, data categories and their reporting formats, that can be used to standardize information generated under each EITI Requirement. The review conducted for this study included a sample of recent EITI Country Reports, as well as other initiatives and industry standards.

These recommendations should be considered as a first step towards standardizing data reporting under EITI Requirement, and need to be tested with future EITI reporting to identify issues with data collection under the headings as categorized in this report.

The research team would recommend a step by step approach to this, starting with a specific set of requirements, across a number of countries. This will allow the EITI secretariat to develop a set of comparable statistics for various reporting entities, as well as start constructing guidelines for EITI implementers.

The table below summarizes the type of data output for each EITI Requirement, which are then presented in more detail in the main text.

TABLE: SUMMARY OF DATA OUTPUT UNDER EITI REQUIREMENTS

	EITI Requirement	Qualitative data	Quantitative data	International standard available	Page number
3.2a+b	Legal framework				15
	Legal codes, regulations and reforms	✓	✓		
	Government agencies	✓			
	Ownership over natural resources	✓	✓		
	Licensing regulations	✓			
	International codes of conduct/signatory to treaties	✓			
3.2a	Fiscal regime				20
	Fiscal regime	✓	✓		
	Fiscal devolution	✓	✓		
	Investment		✓		
	Customs/trade	✓	✓		
3.3	Overview of extractive industries				24
	Project stages		✓	emerging	
3.4	Contribution of extractive industries to economy				29
	Share of GDP		✓	✓	
	Share of government revenues		✓	✓	
	Extractive industries and exports		✓	✓	
	Extractive industries and employment		✓	✓	
3.5	Production data				31
	Production volume		✓	✓	
	Production value		✓	✓	
	Export value		✓	✓	
3.6	State participation				34
	Rules governing state participation	✓			
	Tool for state participation	✓	✓		
	Equity ownership		✓		
	How is state controlled exercised	✓			
	SOE finances		✓		
	SOE beneficiaries		✓		
3.7	Distribution of revenues				35
	Receipt and allocation process		✓		
	Allocation and distribution of revenues		✓		
	Accounting for allocation	✓			
3.8	Further information on revenue management				37
	Revenue accounts	✓	✓		

TABLE: SUMMARY OF DATA OUTPUT UNDER EITI REQUIREMENTS

	EITI Requirement	Qualitative data	Quantitative data	International standard available	Page number
3.9	Register of licenses				39
	Property details		✓	emerging	
	Geospatial data		✓		
	Ownership details		✓		
	License details		✓		
3.10	Allocation of licenses				40
	Allocation process	✓	✓		
	Bidding process	✓	✓		
3.11	Beneficial ownership				41
	Details on board members	✓			
	Politically exposed persons	✓			
3.12	Contracts				43
	Title/ description	✓		emerging	
	Status	✓			
	Items	✓			
	Signatory details	✓			
	Documentation	✓			
4.1 & 4.2	Revenue streams				46
	License and concession fees		✓	✓	
	Profits taxes		✓	✓	
	Royalties & bonuses		✓	✓	
	Trade related revenue flows		✓	✓	
	Dividends & state entitlements		✓	✓	
	Grants and donations		✓	✓	
5.3	Assessment by independent administrator				48
	Issues	✓			
	Analysis	✓			
	Recommendations	✓			

SECTION 1: INTRODUCTION AND METHODOLOGY

The Extractive Industries Transparency Initiative (EITI) is an international standard to 'promote open and accountable management of natural resources'. By encouraging governments, extractive companies, civil society and the public to engage in discourse around transparency of the extractive sector, it aims to facilitate the management of a country's natural resource wealth to benefit all its citizens.

An EITI Country Report contains a wealth of information on regimes affecting the country's extractive sector and its people. The generation of information, both in the narrative and data format, is meant to facilitate the engagement between various stakeholders in the EITI process. As this process has matured over the years, the need for making this information more accessible and comprehensive has arisen.

To facilitate the utilization of the rich data generated by a country's EITI review process, this report makes recommendations on reporting formats for data, with the aim of standardizing information across a country's timeline and between countries.

A number of stakeholders are involved within the EITI data generation process, from the country Multi Stakeholder group, to government agencies, extractive companies, local communities and civil society groups. The recommendations in this report are meant to facilitate these stakeholders in reporting data (qualitative and quantitative) in a standardized format to allow for improved understanding, analysis and accountability of the extractive sector.

The data output standards presented here are recommendations only and are not meant to be prescriptive. Nor should they be considered as a 'reporting template', the decision on how and what to report remains the domain of the country's Multi Stakeholder group. The recommendations apply to data output and are not meant to replace the larger reporting requirements under the EITI process.

These options and recommendations are proposed by the research team. They are not sanctioned by the EITI nor the World Bank, and following them will not necessarily lead to EITI compliance. Implementers of the EITI are advised to review the EITI Standard and guidance notes for assistance on following the EITI Requirements.

The report is based on a review of the format and categories of data currently being reported by international extractive revenue transparency initiatives, supplemented by the research team's own experiences in managing extractive sector data for over three decades.

The report starts by outlining the methodology and definition of terms employed, before turning to each particular EITI Requirement. Within each Requirement, the report recommends standards for data output that may be employed by implementers of EITI. A sub-section on visualization of the particular data set is also recommended where applicable. At the end of the section on recommendations, suggestions for further steps are provided.

The third section of the report turns to the technical aspects of submitting EITI data such as reporting languages, data repositories and exchange systems.

TERMINOLOGY

The following terminology is used within this report

EITI Requirement: Refers to a Requirement, and applicable heading and subheading, as stated in the EITI Standard, published by the EITI International Secretariat on January 1, 2015[1]. Within the EITI Standard document, the Requirements identified for data output standards are listed in Table 1.

Standard: The term is used to refer to a bench-mark or a customary measure, and unless specifically stated, does not refer to the EITI Standard as published by the secretariat.

Government: The term government, unless specified, refers to the Federal government. Where a distinction is required, State government is used to refer to the provincial/state government.

Local Currency: When the report recommends reporting local currency, do so using the 3-letter ISO 4217[2] format, e.g. AED, AFN etc.

Data: Unless specified as quantitative, qualitative or spatial, the term is used to refer generally to information being collected for an EITI Requirement.

Data Category: Refers to a data heading, for which information is presented (such as data under 'Corporate Tax Rate')

Data Point: Refers to a single data entity/point (such as percentage or dollar value)

Data Format: Refers specifically to the units of reporting for data points. The following terms are used to classify formats:

- Qualitative data has been broken down into three categories:
  - Narrative: This refers to descriptive reporting, where the implementer chronicles the information to be provided.

[1] https://eiti.org/files/English_EITI_STANDARD.pdf
[2] http://www.iso.org/iso/home/standards/currency_codes.htm

- Text: This refers to information that is provided in text format, but should not be used for descriptive purposes. It is used to refer to titles of legal regimes or names of government agencies etc.
- Classification: Refers to data points that must be within pre-defined classifications and require a 'tick-mark' approach.

- Quantitative: Where information is presented in a numerical value, in appropriate units.
- Spatial: Where information relevant to spatial co-ordinates is presented, in appropriate units.

CLASSIFICATION OF RECOMMENDATIONS

The member countries and extractive companies that are signatories to and participants of the EITI cover a wide range of capabilities and resources. The capacity at the government and extractive company level to provide information differs, as well for civil society and community partner. To facilitate data reporting from each group, this report takes a good, better and best approach to data standards. These are classifications developed by the research team and do not pertain to EITI compliance.

The approach allows three levels of recommendations to be made; the 'good' focuses on meeting the minimum requirements set by EITI Requirement; 'better' and 'best' approaches building further on the basic standards. As EITI is an evolving process, the better and best approaches are meant to encourage participants to standardise reporting where increased information and data commitments are being made by the Multi Stakeholder group. The three levels of recommendations should not be seen as a three tier reporting system.

Good refers to reporting standards that meet the minimum data output to be provided under each EITI Requirement. The recommendations take into consideration differing capacity for stakeholders and include data formats that are already in common usage in different EITI Country Reports.

Better refers to reporting standards that are enhancements of data output covered under the good category. These recommendations differ by EITI Requirement; in some cases they provide standards for more disaggregated reporting within a data category and in others they refer to more details being provided for each category. In some cases, there may be just one standard that is considered suitable and therefore no differentiation will be made between the different levels of recommendations.

Best refers to reporting standards that represent the highest international benchmarks and standards and are considered to provide comprehensive information, beyond the minimum data requirements. For some data categories international standards are still evolving, and the recommendations reflect evolving trends rather than set standards.

METHODOLOGY

Data outputs under each EITI Requirement, as stated under the EITI Standard, were first classified on the basis of qualitative, quantitative and spatial data. Two judgments were used here, first what the EITI Requirement naturally lends itself to and second whether data points of a different nature can be identified. For example Legal Framework naturally lends itself to a narrative description, but specific issues (such as ownership of resources) can be added as a binary/single data point within this field.

Second, data outputs were marked for those that are more likely to follow international data standards and those more likely to have more specific national standards. The main principle in establishing the distinction was the likelihood of a data category to be comparable across countries. For example quantitative data on production volume for oil is considered more likely to allow for cross-country comparisons relative to a narrative on contracts and licenses[3].

Third, a distinction between data requiring disaggregation relative to data requiring details was made. The main principle was whether data can be 'summed up', in which case it is open for disaggregation. Where it cannot be summed up, it is more likely to fall in the latter category. For example, license data is one that requires details (name of company, date of permission etc.) while Revenue Flows to the government is one of disaggregation (where the components can be summed up to the larger sum). The results of this assessment are shown in Table 1. The table was also used to identify the EITI Requirements where commonly used data standards were easy to identify and those that required further investigation. The latter headings were further investigated within industry standards and research analysis, weighing the advantage/ disadvantages between different options where common standards were not in use. The report recommendations in Section 2 are based on the culmination of these findings.

Once the primary profile for each EITI Requirement was established, a review of data reported by international transparency initiatives, international data bases and industry reporting standards was undertaken. EITI Country Reports for Ghana, Indonesia, Kazakhstan, Mongolia,

[3] This does not assume national level data cannot be compared across countries, but that the norm for such comparison is not clearly established.

Norway, Peru, Solomon Islands, and Zambia, were also reviewed. The countries were selected as they cover varying geographies, have recently published reports (2012-15) and some include coverage of both mineral and oil production. Additionally the countries reflect varying levels of state capacity.

The review looked at the data format/information contained for each data category relevant to the EITI Requirements, and the level of disaggregation and detail. Commonly used data reporting categories and formats were identified.

In addition, stakeholders from a number of transparency initiatives were interviewed about their experiences with EITI Requirement data outputs and the wider data issues in the sector.

Informed by the above findings and the research team's own experience in data management and reporting, options and recommendations for each EITI Requirement are presented in the next section.

TABLE 1 DATA OUTPUT PROFILE FOR EITI REQUIREMENTS

	EITI Requirement	Qualitative data	Quantitative data	Spatial data	International standard available?	Data disaggregation	Data detail
3.2a	Fiscal regime	✓	✗		✗		✓
3.2a+b	Legal framework	✓	✗		✗		✓
3.3	Overview of extractive industries		✓	✓		✓	
3.4	Contribution of extractive industries to economy		✓		✓	✓	✓
3.5	Production data		✓		✓	✗	
3.6	State participation	✓	✓		✗	✗	
3.7	Distribution of revenues		✓	✗	✓	✓	
3.8	Further information on revenue management	✗	✓		✗	✓	
3.9	Register of licenses	✓		✓	✗		✓
3.10	Allocation of licenses	✓			✗		✓
3.11	Beneficial ownership		✗		✗		
3.12	Contracts	✓	✓		✗		
4.1	Revenue streams		✓		✓	✓	✓
4.2	Revenue streams continued		✓		✗		✓
5.3	Assessment by independent Administrator	✓					✗

Key: ✓: applicable to category
x: further investigation undertaken by SNL

SECTION 2: DATA OUTPUT UNDER EITI REQUIREMENTS

The following section builds upon the requirements for each EITI Requirement listed under Table 1. The first step was to establish the data categories that would be applicable, the format for each category and then the recommendations for good, better and best practices. The data categories for each section should therefore be considered as standards recommended by the research team. Some data categories, such as State Participation can be covered under two EITI Requirements. These are listed only once, with a full list of data categories covered available in Annex V.

LEGAL AND FISCAL REGIME GOVERNING THE EXTRACTIVE INDUSTRIES (3.2)

EITI Requirement 3.2 (required) is defined as follows:

a) This information must include a summary description of the fiscal regime, including the level of fiscal devolution, an overview of the relevant laws and regulations, and information on the roles and responsibilities of the relevant government agencies.

b) Where the government is undertaking reforms, the multi-stake holder group is encouraged to ensure that these are documented in the EITI report.

The overview of the legal and fiscal regimes can cover legislation, proclamations and regulations, the departments, offices or agencies that exercise this authority and reforms under consideration.

A review of a sample of recent EITI Country Reports shows a spectrum of reporting streams that provide a context for the legal and fiscal regimes. For example, in the case of legal regimes, the Kazakhstan Country Report[4] states the titles of the legal codes applicable to the extractive sector, whereas the Solomon Islands[5] Country Report, provides a brief discussion on the state of the legal regime.

The following data categories have been identified under this Requirement. Data options/formats for each are then discussed in detail.

Legal Regime:
- Legal codes, regulations and reforms
- Ownership over natural resources
- Licensing regulations
- International codes of conduct/signatory to treaties

Fiscal Regime:
- Fiscal transactions
- Fiscal devolution

Government Agencies

LEGAL CODES, REGULATIONS AND REFORM

Data output: Narrative + quantitative data

The information required under this data category can take two forms; the first is a narrative description of the legal codes and regulations that govern the extractive sector and the second is quantitative data that provides a quick overview of these codes.

Good practice in this category should cover information for the major legal, regulatory and policy documents, listed in Table 2. These refer to extractive specific legislation. The title for each applicable legislation, regulation and directive should be provided, where the document can be located, its year of drafting and when it was last updated/amended. Additionally, if the legal framework is under reform, it should be clarified what stage the reform is at.

In addition to extractive specific legislation, there are other legal frameworks that can provide context for the sector such as laws related to the environment and labour laws (Table 2). These are recommended, as they provide greater context for the legal environment in which the extractive projects operate. The greater the inclusion of 'other legislation' in the data categories the higher the transition from better to best.

The discussion on fiscal regulations/codes is discussed in a sub-heading later in this section.

An extensive list of other legislation is not provided here, as depending on the structuring of mining codes and regulations, these will differ from country to country. The standard for this data category is to include all relevant legal/regulatory documents and to provide the recommended data points for these.

Table 2 also includes a column addressing information on ongoing reform. 'Under discussion' refers to political dialogue taking place but where no procedural changes to mining codes have been undertaken yet. 'In parliament' (or as appropriate) signifies that a bill has been drafted for consideration. 'Awaiting final approval' signifies that they bill has been passed by the parliament and is awaiting final authorization, before it can be considered as law.

As there can be a number of agencies/departments responsible for enforcing a single legislation, for the sake of clarity, information on the responsible agency or statutory authority for legal codes and regulations has been omitted from the required data outputs here. Information on the relevant agencies and statutory authorities are provided in the section on government agencies.

[4] https://eiti.org/files/EITI-2013-Report-Kazakhstan_Annex.pdf
[5] https://eiti.org/files/SIEITI%202013%20Reconcilation%20Report.pdf

TABLE 2 DATA OUTPUT FOR LEGAL CODES AND REGULATIONS

	Name/title	Available in/from	Original draft incorporation/issue	Last updated/ amended	Reform ongoing
Good					
Legislation • Mines and Minerals Act • Petroleum/ Hydrocarbon Act. • Official Model Contracts	Text	Name of dept./ gazette URL link where available	YYYY	MM-YYYY	Yes/No If yes, specify: • Under discussion • In parliament/senate • Awaiting final approval by authority
Regulation(s) directives	Text		YYYY	MM-YYYY	
Policy document	Text		YYYY	MM-YYYY	
Better					
Environmental Protection • Legislation • Directives • Regulations	Text	Name of dept./ gazette URL link where available	YYYY	MM-YYYY	Yes/No If yes, specify: • Under discussion • In parliament/senate • Awaiting final approval by authority
Safety and Health Legislation • Directives • Regulations	Text		YYYY	MM-YYYY	
Labour (if applicable specifically to the extractive sector) • Legislation • Directives • Regulations	Text		YYYY	MM-YYYY	
Best					
Others considered relevant	e.g. If fiscal regime is included in legal documents				

GOVERNMENT AGENCIES

Data output: Narrative

A **good** approach would be to provide a list of government departments, offices and agencies that engage with the extractives sector, with a narrative text to outline their primary function, and the authority they exercise. This is recommended as good practice, as it allows for the simplest level of reporting. The list of departments provided in Table 3 is for illustrative purposes only and the agencies and department titles will tend to differ from country to country.

A **better/best** approach would be to offer greater details regarding these departments and their functionalities in relation to the extractive chain. The World Bank 'Extractive Industries Value Chain' can be used as guidance for this approach, and by each phase, all agencies involved could be listed. This would greatly benefit from visualization.

No distinction between better/best is made for this recommendation as the level of detail by phase of extractive value chain is considered to be adequate.

TABLE 3 LISTING OF GOVERNMENT AGENCIES

Category	Information included	Data format
Good		
Department/ agency	Text	Narrative URL link where possible
Primary function (for each agency)	Narrative	Narrative
Level of authority (for each agency)	Specify: • Authorizing/determining bodies • Exemption granting • Revenue collection • Auditing/expenditure	Classification
Better/Best		
Awards of contracts and licenses Regulation & monitoring of operations Collection of taxes and royalties Revenue management and allocation Implementation of sustainable development policies and projects	Department/ agency title Specify: • Authorizing/determining bodies • Exemption granting • Revenue collection • Auditing/expenditure	Narrative URL link where possible Classification

OWNERSHIP OVER NATURAL RESOURCES

Data output: Narrative + classification

In a majority of jurisdictions, mineral and oil resources are considered as belonging to the country and the rights of extraction are administered by the Federal or State governments. In some cases (such as Papua New Guinea) the legal framework gives this right to the landowners. In other cases (such as the United States) the ownership rights may differ, depending on the location of resource (public or private land). In yet others, landowners do not have sub-surface rights, but have the right to allow access to their lands for extractive companies. It is therefore considered useful to deliver this information specifically whilst providing the context of the legal regime.

It is considered good practice to specify the entity that has the ownership over natural resources, the authority to grant the right of extraction, and the legal document that provides this right. The examples provided in Table 4 are for illustrative purposes and should not be taken as a comprehensive list.

A greater level of detail would be considered better practice, where more information is provided by breaking down these rights by minerals/oil & gas and classifying whether they are administered by federal and the state governments etc.

Finally, best practice would include any other legal frameworks that may be applicable to the ownership/ administration of the extractive sector. These would comprise individual legal agreements with indigenous communities, where the latter have the right of refusal to extractive activity on their land. Other laws that may fall into this category include any that specify areas that are not open for extractive activity (such as protected reserves, national parks, heritage sites etc.), and those that classify a particular natural resource as a strategic resource[6] etc. *The list provided in this category is for guidance only.*

[6] A deposit of strategic importance can be defined as 'a deposit of size which may have a potential impact on national security or the economy and social development of the country, as the national or regional levels, or which is producing or has the immediate potential to produce more than 5% of total GDP in a given year'.

TABLE 4 QUALITATIVE INFORMATION FOR OWNERSHIP OF RESOURCES

Context	Information provided			Data format
Good				
Ownership of the country's natural resources Authority that grants the right of extraction	Legal owner: • *Federal/State government* • *Land owner (private)* • *Hybrid*	Right of extraction granted by: • Constitution • Regulations • Individual contracts	Specify: Reference to legal document that grants this right	Narrative
Better				
Are these rights specified by mineral type/ oil & gas	*List specification:* • *Precious metals by federal government* • *Quarry material by local government*		Specify: Reference to legal document that grants this	Narrative
Best				
Other legal frameworks impacting ownership over resources	*Specification of strategic deposits* *Right of refusal by local community - similar to free, prior and informed consent (FPIC)*		Specify: Reference to legal document that governs this	Narrative

LICENSING REGULATIONS

Data output: Narrative + quantitative

While definitions of licenses are usually included in mineral and petroleum codes and regulations, we recommend that this information be provided separately from the narrative on legal codes and regulations.

Good practices focus on including the basic markers for license data that will be present in the legal framework governing licenses (Table 5). In different jurisdictions, different terminology may be used, such as permits, leases or licenses. In addition, some countries may use a larger number of categories than others.

Within the mining sector, the following are the commonly used classifications for licenses:

- **Claim:** The ground covered by this polygon has been set aside for an activity to take place. Minerals have been found in this area but no mining has taken place.
- **Exploration Lease/License, Prospecting:** The ground covered by this polygon has been leased or licensed to be explored. No extraction activity.
- **Exploration Permit:** The owner of this ground covered by the polygon has a permit for exploration of minerals to occur. No extraction activity.
- **Mining Lease/License:** The ground covered by this polygon has been put aside for a mining activity or mining activity is currently taking place.
- **Quarrying License:** The owner is granted a quarry license for a clearly defined area, where material for construction purposes, such as construction sand, gravel, and quarry rock is extracted.
- **Artisanal Mining License:** These pertain to mining activities done manually, without the use of machinery.
- **Other:** Any other lease type not assigned to the other types, for example Infrastructure leases.

Within the oil and gas sector the following classifications are commonly used:

Seismic/ Exploration licenses: Allows the authorized to carry out exploration and seismic surveys of a given areas (whether on/off shore). This may also take the form of special access authorization for exploration activity.

Retention lease: Allows the holder to retain certain rights to a petroleum discovery, which is not currently ready for commercial exploitation, but may be in the next decade or so (time for lease will vary by country/license).

Exploitation/Production licenses: The area covered by this block has been put aside for or oil extraction. These blocks may also be referred to as concessions.

Depending on the country, the EITI implementer should describe these mineral or energy rights, as listed in the country regulations.

Better practices focus on disaggregating the data markers for license profiles further by type of mineral or energy right.

There is no specific recommendation for best practice for this category, other than to provide all information considered relevant, that is not already included in the previous two recommendations. These can take a narrative form. Some suggestions for consideration are provided in Table 5.

SECTION 2: DATA OUTPUT UNDER EITI REQUIREMENTS

continued

Table 5 addresses the legal context for licensing only and is not meant to address the data output for EITI Requirement on register and allocation of licenses (3.9 and 3.10). These two requirements are addressed later in the report.

TABLE 5 LEGAL PROFILE OF LICENSES BY TYPE

License title	Description	Granted by: *Name of authority*	Available in/from	Duration	Area	Application fee (per license)	Annual fee (if applicable)
Good							
Mineral resources							
Claim	Text	Text	Name of dept./ gazette	No. of years	Specify unit (in hectares) for each license	$ value/ hectare	$ value/license
Exploration lease	Text	Text	URL link where available			Local currency / hectare	Local currency / license
Exploration license	Text	Text					
Prospecting license	Text	Text					
Operating license	Text	Text					
Closure/ rehabilitation	Text	Text					
Artisanal mining	Text	Text					
Oil/gas							
Seismic survey	Text	Text	Number of years	Specify the block dimensions by km^2 x km^2	Area fees per km^2		
Exploration	Text	Text					
Exploitation	Text	Text	Specify if they differ by license				
Concessions	Text	Text	Number of years		$ value/ Local currency (Include any signing bonuses)		
Better: For each license title listed above, disaggregate information further by							
Scale of licenses							
Small scale	Narrative	Text	Name of dept./ gazette	No of years	Min – Max size (In hectares)	Local currency/ $ value – per license	Fee applicable by year 1, year 2 and year 3
Medium scale	Narrative	Text	URL link where available				
Large scale	Narrative	Text					
Type of mineral[a] *(applicable if licenses differ by mineral)*							
Precious	Narrative	Text	Name of dept./ gazette				
Base metals	Narrative	Text					
Industrial minerals	Narrative	Text	URL link where available				
Underlying rights							
Is the right to explore exclusive/ non-exclusive?	Text – exclusive/ non-exclusive	Text	Name of dept./ gazette				
Can the right to explore be converted to include the right to extract?	Yes/No	Text	URL link where available				
Environmental bonds							
Environmental bonds	Narrative	Text	Name of dept./ gazette			Percentage of value of project/ revenue as appropriate	
Environmental fund	Narrative	Text	URL link where available				

TABLE 5 LEGAL PROFILE OF LICENSES BY TYPE

License title	Description	Granted by: *Name of authority*	Available in/from	Duration	Area	Application fee (per license)	Annual fee (if applicable)
Best: Provide additional legal frameworks specific to licensing							
Limits on ownership by type of license	Are there any legal limitations on who can own a license (narrative)? Are there limitations on the number of licenses one entity can have (narrative)? Are certain areas reserved for the government (narrative)?						
Requirements for holding license	Minimum spend on license areas (narrative + qualitative) Reporting requirements from companies - monthly, quarterly, annual (narrative + qualitative) Regulations with regards to transfer and relinquishing of licenses (narrative)						
Other	As appropriate to county						

a: For a full list of minerals, see Annex III

INTERNATIONAL CODES OF CONDUCT/TREATIES

Data output: Narrative

There are a number of international codes of conduct for the extractive sector, to which countries and companies are signatories. These can affect the legal environment and compliance requirements for a country as well as company. Some of these are listed below and may be considered in the 'additional information' category.

The research team has not provided a good/better/best recommendation for the inclusion of these as narrative data, but research for this report has shown that these codes are often included in discussions around governance and transparency of the extractive sector. Therefore the mention of international conventions or treaties a government is signatory to, in the narrative form, can be considered. Examples of these codes include:

- Stockholm Declaration
- UNESCO Convention for the Protection of the World Cultural and Natural Heritage
- Ramsar Convention on Wetlands of International Importance
- Convention on Biological Diversity (Biodiversity Treaty)
- Convention on the Law of the Sea
- International Cyanide Management Code
- ILO Conventions and Recommendations for Human Rights and Labour Issues
- ILO Convention 169, concerning Indigenous and Tribal Peoples in Independent Countries
- ILO Code - Safety and health in underground coalmines
- ILO Code - Safety and health in the iron and steel industry
- WTO trade measures on local content
- International Covenant on Civil and Political Rights (UN)
- Kimberly Process
- Conflict Minerals in the great lakes region
- Double Taxation Treaties

FISCAL REGIME

Data output: Classification + qualitative + narrative.

There are a number of data points that can provide the context of the fiscal regime for the country's extractive sector. These relate to providing information on the type of fiscal transactions that are applicable to the sector (from taxes to social security contributions etc.). This section provides options for an overview of the contextual setting of a fiscal regime only. A detailed description and data output for revenue flows is covered under the EITI Requirement 'Revenue Streams'.

Table 6, in addition to the review of other initiatives and EITI Country Reports, is informed by publications from PricewaterhouseCoopers, E&Y and Deloitte, who regularly report on fiscal regimes in the extractive sector. Within this table, binary answers (Yes/No) are listed as quantitative data.

TABLE 6 FISCAL REGIME COUNTRY PROFILE

Fiscal category	Information included	Data format
Corporate Income Tax (CIT)		
Top rate of CIT	Percentage rate	Quantitative
Level at which applied	• Federal • State	Classification
Restriction on use of tax losses	Yes/No By percentage rate or number of years	Quantitative
Special allowances/contracts	Yes/No	Quantitative
Mineral taxes		
Mineral tax name	Title	Text
Level	• Federal • Provincial • Other (if applicable)	Classification
Basis	• Ad-valorem (percentage of product value) • Ad-valorem progressive with price • Ad-valorem progressive with production • Ad-valorem progressive with operating ratio/profit • Royalty applied to operating margin (net profits royalty) • Other - sliding scale, formula, etc. (specify)	Classification
Rates for top 5 extractive products based on value of production, for example:		
Copper	Percentage or $/tonne (will depend on basis)	Quantitative
Gold	Percentage or $/oz.	Quantitative
Petroleum	Percentage of revenue	Quantitative
Bulk Mineral	$/tonne	Quantitative
Deductible in CIT calculation	Yes/No	Quantitative
Oil and gas taxes		
Oil and gas tax name	Title	Text
	• State production tax • Production handling fee • Net revenue/operating fee • Lease costs/fee • Other (specify)	Classification
Level	• Federal • Provincial • Other (progressive/ regressive, if applicable)	Classification
Basis	• Wellhead • Production based royalty • Production based tax on revenues • Rate of return based profit oil sharing • Excess profits/ extraordinary income/price based resource tax • Other (sliding scale, production bonuses etc.)	Classification

TABLE 6 FISCAL REGIME COUNTRY PROFILE

Fiscal category	Information included	Data format
Other taxes & payments		
Name of other tax	• VAT • Sales revenue • Windfall tax • Capital gains tax	Quantitative
Basis of other taxes	• Price of mineral • Gross revenue • Turnover	Quantitative
Rate	Percentage rate	Quantitative
Tax on exports (Minerals)		
Ore extracted	Yes/No	Quantitative
Processed ore		
Refined metal		
Other (if applicable)	Percentage rate	
Tax on exports: Oil/gas		
Crude oil		
Natural Gas/LPG		
VAT charged on exports	Yes/No	Quantitative
Withholding tax		
Dividends	Percentage rate	Quantitative
Interest	Percentage rate	Quantitative
Royalties	Percentage rate	Quantitative
Service fees	Percentage rate	Quantitative
Fiscal provisions		
Tax holidays	Yes/No Particulars	Quantitative Narrative
Reduced royalties fees	Yes/No Particulars	Quantitative Narrative
Waiving of corporation tax	Yes/No Particulars	Quantitative Narrative
Customs duty exemptions	Yes/No Particulars	Quantitative Narrative
Other comments		
Fiscal stability agreements	Yes/No Duration (number of years)	Quantitative
Social contributions	Yes/No Voluntary or mandatory	Quantitative

TABLE 6 FISCAL REGIME COUNTRY PROFILE

Fiscal category	Information included	Data format
Government equity	Specify which categories are applicable: • Paid-up equity on commercial terms • Paid-up equity on concessional terms • Carried interest • Tax swap • Equity in exchange • Other	Classification
Production sharing	Basis of application: Cost minerals/oil Profit minerals/oil % share	Classification Quantitative
Transfer pricing	Yes/No Particulars	Quantitative Narrative
Ring-fencing	Yes/No Particulars	Quantitative Narrative
Thin capitalization	Yes / No Particulars	Quantitative Narrative
Special economic zones	Yes / No Particulars (fiscal incentives)	Quantitative Narrative

FISCAL DEVOLUTION

Data output: Narrative

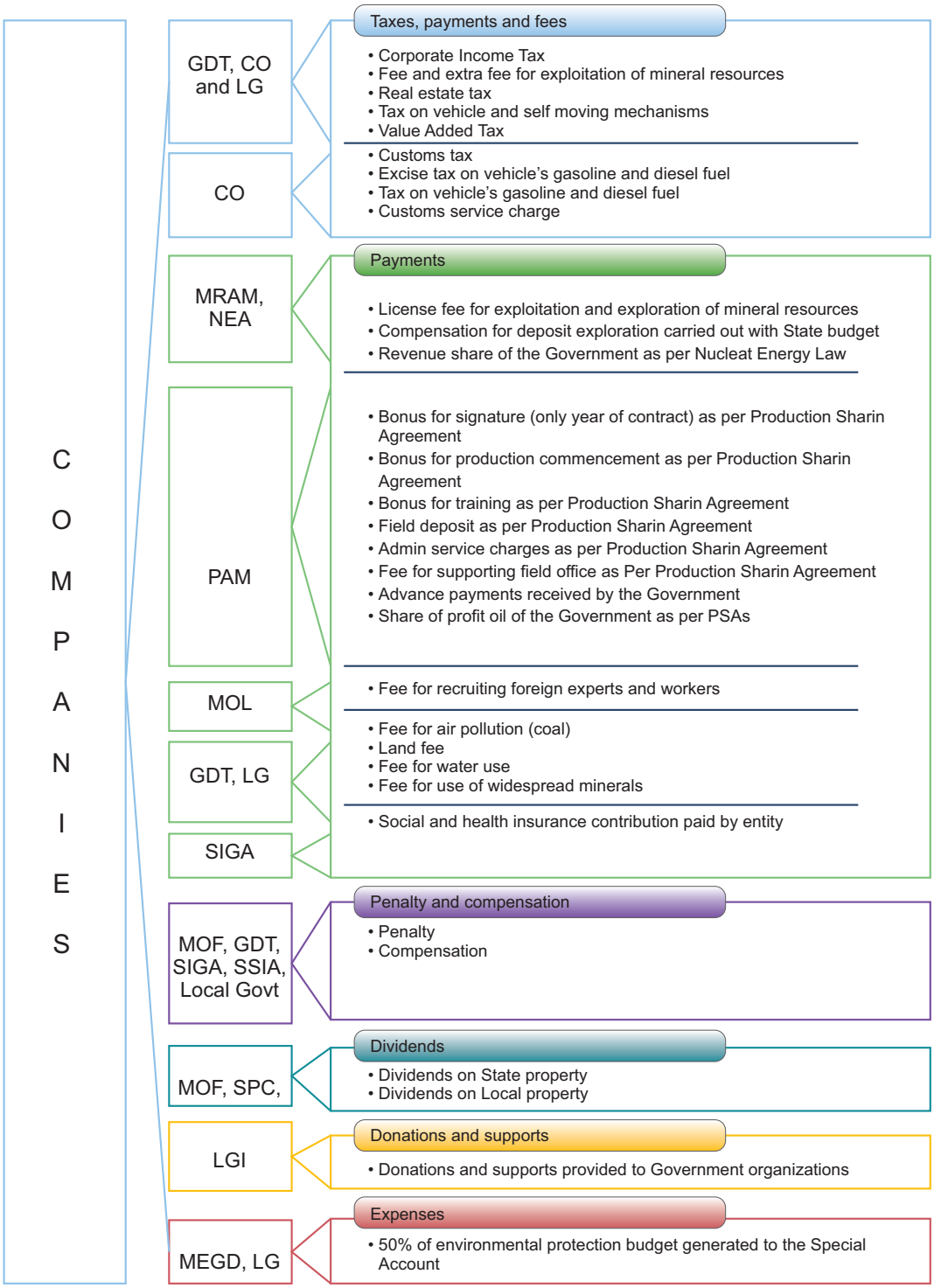
The information for fiscal devolution can be provided in a narrative, which should cover the following information. Additional information on *data for fiscal devolution is covered under the section on Distribution of Revenues*.

- Governed by legislation/regulations
- Specific to extractives
  - *o Specify basis for legal regime for devolution*
  - *o Which of these concepts is being used for devolution; fiscal equivalence/responsibility*
  - *o What is the status of the subsidiary*
  - *o What autonomy is granted to sub-regions and on what legal/fiscal basis*
  - *o How is the expenditure assignment for sub-regions governed*
  - *o How is the revenue assignment for sub-regions governed*
  - *o What is the intergovernmental transfers/grants design*
  - *o Is there a revenue sharing formula between the Federal and State governments*
  - *o What are the level of sub-national government that receive revenue*
  - *o these paid directly to the sub-regions or through federal government*

VISUALIZATION

A flow chart using revenue flows as the foundation, where additional layers are added to show what legal and fiscal regimes and the authorities who exercise control over these flows. A good example is provided by the Mongolia Report (2013, pg. 68). The visualization clearly outlines the agencies involved and the category of revenue flow for which they are responsible.

FIGURE 1 FISCAL AND LEGAL REGIME CONTEXT FOR MONGOLIA



Source: EITI Country Report for Mongolia (2013)

OVERVIEW OF THE EXTRACTIVE INDUSTRIES (3.3)

The EITI Requirement 3.3 (required) is defined as follows:

The EITI Report should provide an overview of the extractive industries, including any significant exploration activity.

The data output for this category should provide information on the number of projects in the country, broken down by the stage of operations and their size. During the exploration and prospecting phases, a project is defined as an individual license, while during the construction, operations and rehabilitation phases a project refers to an individual mine site. In addition, due to the cyclic nature of the mineral sector, information needs to be provided on the status of these projects to provide a more comprehensive overview of the extractive sector.

The information required under Table 7 should be available from the ministry that grants licenses for the extractive sector. Countries employing on-line cadastre systems can extract this information from their data repositories.

In countries where such information may not be available, extractive companies (as listed in the register of licenses) should be able to provide the required information. There are also a number of commercial organizations, including SNL Financial, which carries such information.

Good practice would be to provide this data at the national level and in aggregate. This would include providing information on the number of projects as well as the number of companies (more than one project can be operated by a single entity). Breaking this down by commodity is recommended.

Better practice would be to break the information down at project level and Best practice would include information on resources and reserves. The information required under this table should be available from the ministry of natural resources. In addition, detailed information will be collected under EITI Requirements for Production Value and Register of Licenses, which can be used to populate this table.

TABLE 7 ESTABLISHING (LSM) PROFILE OF EXTRACTIVE SECTOR

Primary commodity	Project stage	No of projects	Number of companies	Data format
By commodity: *Copper* *Gold* *Iron ore* *Mineral sands*	Early stage:			
	Grassroots			
	Exploration			
	Late stage:			
	Reserves development			
	Pre-feasibility			
	Feasibility			
	Construction			
	Operational	As a number	As a number	As a number
	Closure in 2 years			
Oil *Natural gas*	Seismic exploration			
	Site surveys			
	Exploration drilling			
	Appraisal drilling			
	Construction			
	Producing wells			
	Closure in 2 years			

Better			
Primary commodity	**Category**	**Information covered**	**Data format**
By commodity: *Minerals* *Oil and gas*	Property	Name	Text
	Owner	Name	Text +URL link where available
	Development stage	Specify	Classification: As listed in Table 7
	Activity status	Specify	Classification: Active, On hold or In Active
Best			
Minerals	Primary reserves and resources	Volume as identified by company for primary commodity	Quantitative (volume unit as listed in Annex III)
Oil and gas	Proven reserves	• Volumetric (early phase) • Materials balance (operational phase)	Quantitative Total barrels

IDENTIFYING PROJECT STAGE

The following project stages are based on accepted practice in the mining industry:

Early stage exploration: A project that does not have a defined resource[7] estimate. A further distinction can be drawn between Grassroots (preliminary license allocated and reconnaissance has been carried out) and Exploration (preliminary testing is underway, including mapping, sampling and some level of drilling).

Late stage exploration: A project that does have a defined resource estimate, but a decision to go-ahead with production has not been reached. This stage can be further disaggregated between:

- Reserves Development, where an initial resource/ reserve has been calculated, with additional drilling being undertaken to further define the project
- Prefeasibility/Scoping study, where an in-house assessment to determine mining and processing methods, capital costs, net present value, internal rate of return, etc. has been undertaken,
- Feasibility study, where a bankable study is being undertaken to determine the economic viability of the project. This stage will also consider broader issues such as an environmental assessment, local community engagement, legal and permitting requirements.

Construction: Where the decision to go-ahead has been reached, and the mine site is being readied for production. This will include development construction plans for the property, and planning/constructing supporting infrastructure.

Operations: The mine begins to produce output that is saleable and/or ready for processing. Where exiting operations are being expanded, for expediency, these can also be listed as operational mines.

Mine closure: When a mine is coming to the end of its mine life, and is expected to cease production within two years or less.

For oil and gas, the following stages apply:

Early stage exploration: Seismic exploration and site surveys are the two earliest stages of exploration and are conducted after the award of a license. If the exploration results in an indication of potential hydrocarbon reservoirs, the next stage of surveys are carried out. Site surveys require more in-depth exploration activity. Positive results, will lead to a structured drilling programme.

While these two stages may be considered separately within the oil and gas industry, these are very early phases and projects may be lumped together for ease of reporting.

Late stage exploration: Exploration drilling is where one or more exploration wells are drilled to determine if the prospect exists and whether the reservoir is viable for production. The next stage is appraisal drilling; this phase of the lifecycle of the oil/gas field is used to establish the size of the field, and whether the project will have commercial value. Information on flow rates, temperatures and pressures will be established during this phase. The value of the oil/gas asset is likely to be determined at this point.

Construction: Commonly referred to as development, during this phase the technical and production viability of the project has been established. Equipment, services and materials will be procured, including a system for the transport of the oil and gas. Once the facility has been tested to achieve a stable production level, the project then moves into production.

Production: The project is in production and an output for export or processing is available.

[7] Resource estimates should only be considered if they meet an international standards as specified by JORC (http://www.jorc.org/) or equivalent standards.

IDENTIFYING ACTIVITY STATUS

Activity status, for both mineral and the oil/gas sector, are defined in this report as follows:

Active: Currently being explored, developed, or mined.

On hold: Activity has been suspended for any number of reasons; technical, labour, environmental or political reasons, lack of funds etc. However, activity is expected to resume once the underlying factor has changed.

Inactive: All project activity has come to an end. Projects that are under care and maintenance can be listed here.

CALCULATING RESERVES AND THEIR VALUE

Calculations of reserves can be fairly complex and expertise are required to reach correct valuations. The research team strongly recommends that data output under these categories should be as reported by the extractive company[8] or experts are engaged to make these calculations.

Reporting primary resources[9]: Resource estimates, exclusive of reserves, should only be considered if they meet international standards, such as specified by JORC[10] or an equivalent standard.

Proven reserves for oil and gas[11]: An estimated quantity of all hydrocarbons statistically defined as crude oil or natural gas, which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions. Reservoirs are considered proven if economic producibility is supported by either actual production or conclusive formation testing.

The area of an oil reservoir considered proven includes those portions delineated by drilling and defined by gas-oil or oil-water contacts, if any, and the immediately adjoining portions not yet drilled, but which can be reasonably judged as economically productive on the basis of available geological and engineering data. In the absence of information on fluid contacts, the lowest known structural occurrence of hydrocarbons controls the lower proven limit of the reservoir.

Volumetric method: Based on the size of reservoir and the physical properties of the reservoir, more suitable at the early stages of the oil/gas production cycle as there is no established production history at this time of operation.

Materials balance method: Based on data from production history, change in reservoir pressure is used to estimate the remaining oil in the basin.

VISUALIZATION

The tables recommended above provide the data output for this particular EITI requirement, but given the level of information contained, they can be difficult to read. Therefore the visualization for this particular Requirement is recommended to be presented as a map (which can be in a simple JPEG format). Figure 2 illustrates an example of the 'best' standard recommended for visualization. Such graphics can be easily produced by using an online cadastre system if available. Note:

- A good standard would be to provide locations for each project.
- A better standard would be to provide colour coding by stage of activity.
- The best standards would be to provide an additional layer of coding that allows for projects to be distinguishable by commodity and project stage.

CONTRIBUTION OF EXTRACTIVE INDUSTRIES TO THE ECONOMY (3.4)

The EITI Requirement 3.4 (required) is defined as follows:

a) Size of the extractive industries in absolute terms and as a percentage of GDP, including an estimate of informal sector activity.

b) Total government revenues generated by the extractive industries (including taxes, royalties, bonuses, fees and other payments) in absolute terms and as a percentage of total government revenues

c) Exports from the extractive industries in absolute terms and as a percentage of total exports

d) The data for this standard looks at the economic contribution of the extractive sector to the country, in a given fiscal year.

The data covered under this category should address how large the extractive sector is, in relation to the rest of the economy, as well as its importance for employment and revenue to the government. Importance is differentiated separately, as the extractive sector may be smaller than other sectors, but is the primary source of investment or formal employment.

Many of the reporting recommendations in this section are based on developing a standardized format for presenting data that already exists in many of the EITI reports as well as incorporating other data that is publicly accessible on the internet. The reporting

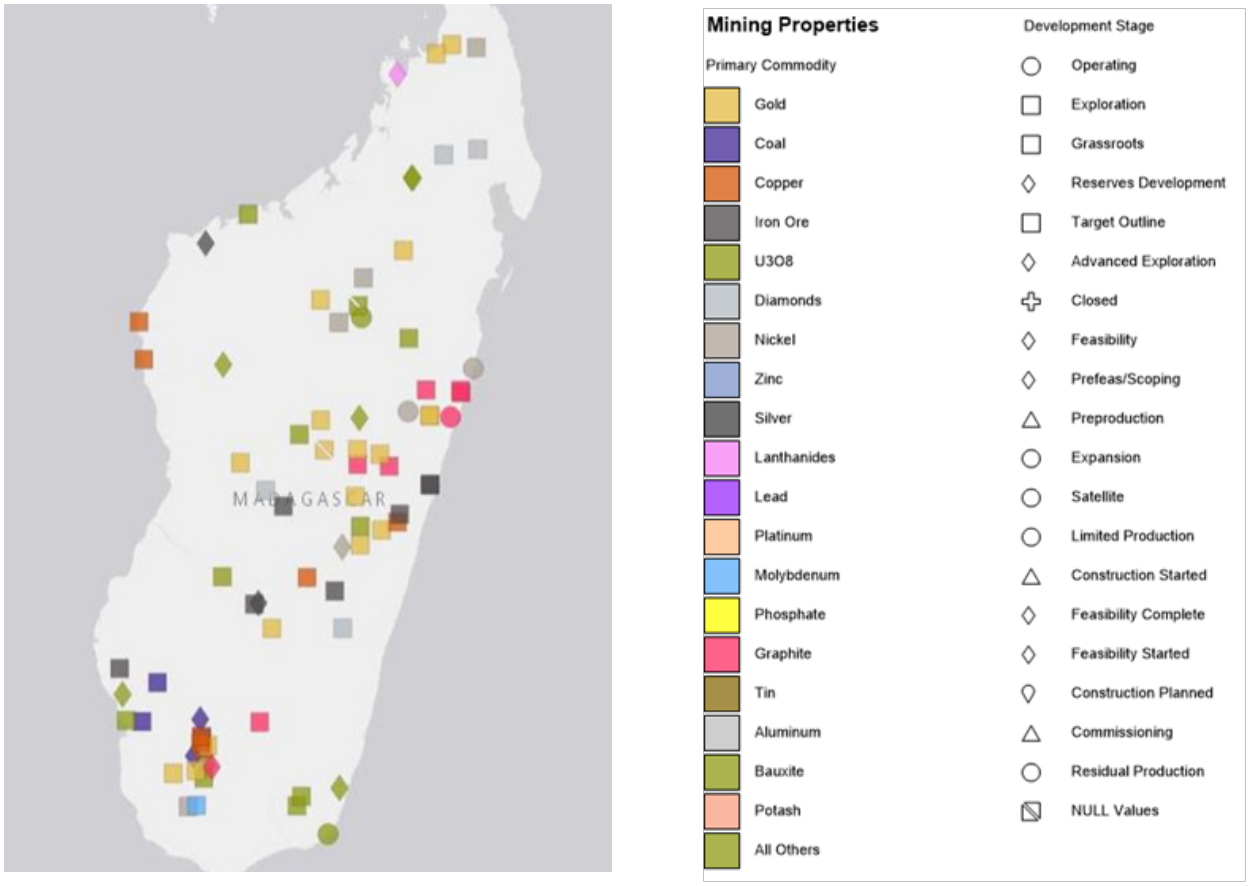
[8] Internationally listed extractive companies will provide resources and reserves information in their annual reports.

[9] Detailed definitions of reserves and resources by the USGS can be found here: http://minerals.usgs.gov/minerals/pubs/mcs/2015/mcsapp2015.pdf

[10] http://www.jorc.org/

[11] Based on OPEC's definition: http://www.opec.org/library/Annual%20Statistical%20Bulletin/interactive/2004/FileZ/definition.htm

FIGURE 2 MINING PROPERTIES IN MADAGASCAR



Source: SNL.com

recommendations detailed below are based on a level of information that implementers of EITI should already be able to access. This section does not make good/better/best recommendations as the data outputs detailed are based on well-established statistics and reporting practices, including the International Standard Classification of Occupations[12].

EXTRACTIVE INDUSTRIES VALUE AND PERCENTAGE SHARE OF GDP

Data output: Quantitative

The GDP indicator is taken from the *World Bank World Development Indicators*, measured in US$.

Best practice of measuring size of extractive industries

Three systems of extractive industry classification were considered; UNIDO's International Standard Industrial Classification (ISIC) of All Economic Activities (Rev 4)[13], North American NIAC[14] codes and the European Union's and Nomenclature of Economic Activities (NACE)[15].

Following the NACE codes is considered a good option, as these classifications are an output-based criterion. This would require adding up the value of the commodity production in the country as well as including estimates for missing values (i.e. where companies have not reported production).

[12] http://www.ilo.org/public/english/bureau/stat/isco/index.htm

[13] http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27

[14] http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2012

[15] http://ec.europa.eu/competition/mergers/cases/index/nace_all.html

Gross Output by industry considers the output of the sector without making allowances for input costs. Gross output can be subdivided into:

- Oil and gas extraction
- Coal mining
- Metal and mineral ore mining (large and small scale, including gemstones)
- Stone mining and quarrying

If possible, gross output from artisanal mining should be included here. Reporting of gross output for artisanal mining will differ amongst countries and by metals. For precious metals, such as gold, production figures are usually a combination of data reported by traders and estimations. In other cases, the data may be purely estimates. Either approach is acceptable as long as the EITI chronicles clearly how these figures were reached.

Using the NIAC codes is considered as a better option, as these classifications are an activity based criterion and focus on the Value Added by the extractive sector. These allow for a more comprehensive tracking of the contribution to the economy. However, this requires capacity within the national statistical centre to calculate and compile.

Value Added for both the mining and oil & gas extraction includes:

- Compensation of employees
- Taxes on production and imports less subsidies
- Gross operating surplus

In addition, support activities for the extractive sector should be considered:

- Drilling oil and gas wells
- Support activities for oil and gas operators
- Support activities for coal mining
- Support activities for metal mining
- Support activities for non-metallic minerals (excluding fuels) mining

The **best** option recommended would be to use the ISIC classification. This classification, which allows for an international standard to be followed, has been in operation since 2008. Conversion of ISIC codes into Trade codes is also readily available. The advantage of using a UN-based classification system allows for cross-country comparisons and can benefit from the regular data collection activities of the government.

The three data streams (ISIC, NIAC and NACE) have their advantages and disadvantages and are mainly related to country capacity to collect such data.

EXTRACTIVE INDUSTRIES AND GOVERNMENT REVENUES

Data output: Quantitative

The data outputs for this category quantitatively demonstrate the importance of the extractive industries to the country's economy relative to other industries. Total government revenue is available as an indicator in the IMF World Economic Outlook Database[16] and can be used to calculate the contribution that extractive revenues makes to overall government revenues.

EXTRACTIVE INDUSTRIES AND EXPORTS

Data output: Quantitative

This data category details the importance of the extractive industries to the country's export portfolio as a whole and should be reported using three quantitative indicators. Total exports in goods and services is available as an indicator from the UNCTAD Data Centre[17] and can be used to calculate the size of the extractive industries exports as a percentage of the total exports of the country. Where contributions from individual minerals/oil and gas is known, these can be shown separately as a share of exports.

EXTRACTIVE INDUSTRIES AND EMPLOYMENT

Data output: Quantitative

This data category is intended to detail the amount of employment created by the extractive industries within the country. When reporting on the number of people employed in the extractive industries, the International Standard Classification of Occupations (ISLO)[18] should be used to ensure a standardized definition of exactly what qualifies as employment within the extractive industries.

Classifications that may be relevant to the extractive industries include ISCO 08 Codes 9311 and 1322 which correspond to mining and quarrying labourers and mining managers respectively. The ILO *ILOSTAT Database*[19] can be used as a source of total employment figures and offers breakdowns by gender, occupation, education and geographic coverage. These two indicators can then be used to calculate the level of employment in the extractive industries as a percentage of employment in the country as a whole.

[16] https://www.imf.org/external/pubs/ft/weo/2014/02/weodata/index.aspx
[17] http://unctadstat.unctad.org/CountryProfile/home/Indexen.html
[18] http://www.ilo.org/public/english/bureau/stat/isco/index.htm
[19] http://www.ilo.org/ilostat

These data recommendations do not apply to artisanal and small scale mining (ASM) employment. Given that such activity is often informal and illegal in nature, it can be resource and time intensive to accurately capture ASM employment figures. Estimations can be used; however the EITI report must clearly identify how these estimates were reached.

TABLE 8 CONTRIBUTION OF EXTRACTIVE INDUSTRIES TO THE ECONOMY

Indicator	Source	Detail/definition	Units	Data type
Extractive industries value and percentage share of GDP				
Production value	Gov.	Production volume x price per unit	US$	Quantitative
GDP	WB	GDP (current US$)	US$	Quantitative
Extractive revenues (% GDP)	WB, Gov.	Extractive government revenue as a percentage of GDP	Percentage	Quantitative
Government revenues				
Extractive government revenue	Gov.	Government revenues from the extractive industries	US$	Quantitative
Total government revenue	IMF	Government revenues from all sources	US$	Quantitative
Extractive revenues (% total government revenues)	Gov.	Extractive government revenue as a percentage of total government revenue	Percentage	Quantitative
Extractive industries and exports				
Extractive exports	UNCTAD	Total exports from the extractive industries	US$	Quantitative
Total exports in goods and services	UNCTAD	Total exports from all industries	US$	Quantitative
Extractive exports (% total exports)	UNCTAD	Total extractive industries exports as a percentage of total exports from all industries	Percentage	Quantitative
Extractive industries and employment				
Employment in the extractive industries	ISCO	Measure the number of people in the extractive industries using the ISCO occupations classifications*	As a number	Quantitative
Total employment	ILO	The total number of people recognized as employed by the ILO	As a number	Quantitative
Employment in the extractive industries (% of total employment)	Gov.	Extractive Industries employment as a percentage of total employment	Percentage	Quantitative

* http://www.ilo.org/public/english/bureau/stat/isco/index.htm

VISUALIZATION

Clustered bar charts can be used to visualize the data relating to the extractive industries percentage share of GDP, government revenues and exports.

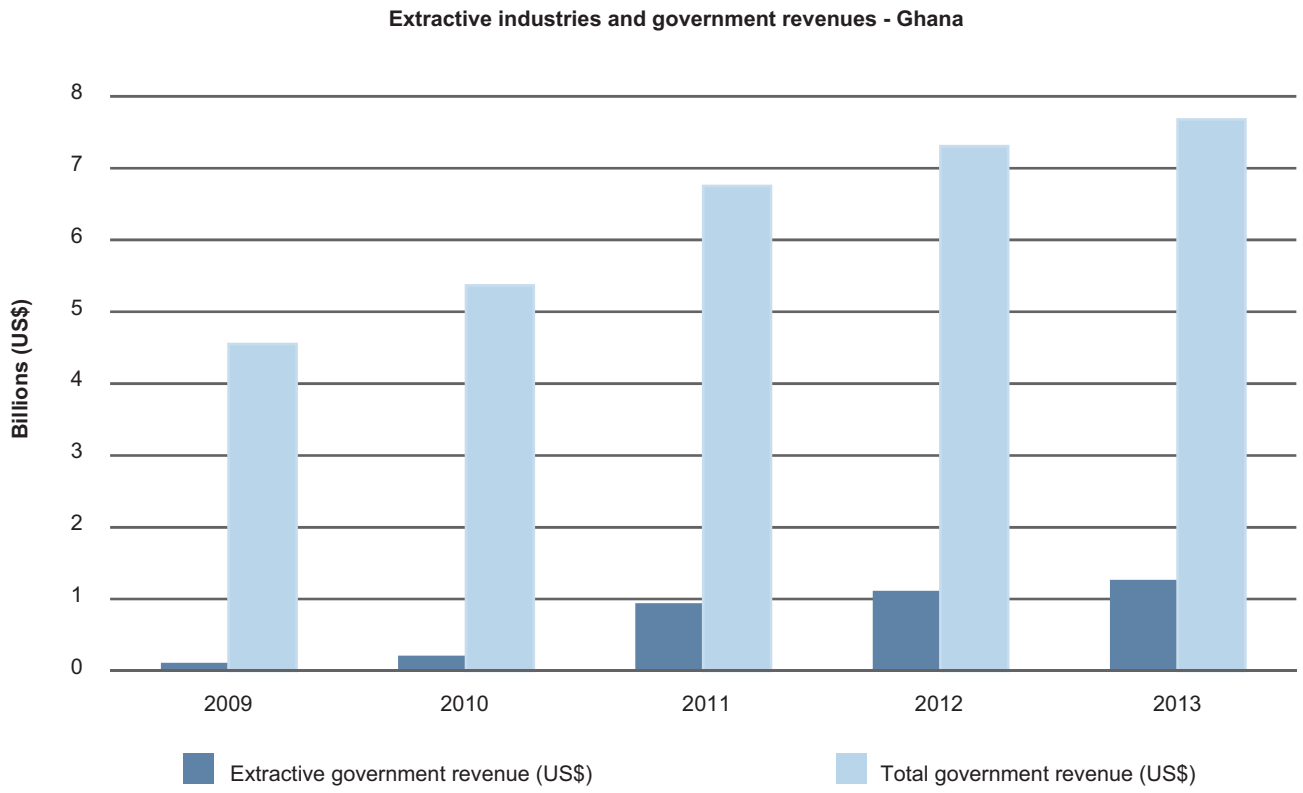
In the instance of extractive industries and the percentage share of GDP, a clustered bar chart should be produced that clusters extractive government revenue and GDP.

For visualizing government revenues data, extractive government revenue and total government revenue should be clustered.

Finally, for presenting extractive industries and exports data, extractive exports and total exports in goods and services should be clustered.

Extractive industries and employment data does not lend itself to this form of visualization and should instead be presented in a tabular format.

FIGURE 3 VISUALIZATION OF CONTRIBUTION TO ECONOMY DATA



Source: Based on data from NRGI 'Unlocking EITI Data for Meaningful Reform' database (2015)

Box 1 outlines one of the better examples of collecting and presenting this data that was reviewed for this study.

Box 1 NRGI's Unlocking EITI Data for Meaningful Reform dataset

The Natural Resource Governance Institutes Unlocking EITI Data for Meaningful Reform dataset* is one of the better examples of effectively presenting EITI data that the research team has found during the review process. NRGI collected data from 223 existing EITI reports published by 37 countries before February 2015 and using this, as well as other data that is publicly accessible on the internet, developed indicators, such as extractive exports as a percentage of total exports, which demonstrate the contribution that the extractive industries have on a country's economy. NRGI extracted this data from the published Country Reports and presented it in both a country-level and project-level data format. This project demonstrated the vast amounts of data that has already been disclosed in the existing EITI reports, and in do so, highlighted the importance of standardizing data reporting practices in order to facilitate deeper and more meaningful.

* http://www.resourcegovernance.org/sites/default/files/nrgi_EITIDataset_20150608.xlsx

PRODUCTION DATA (3.5)

The EITI Requirement 3.5 (required) is defined as follows:

a) Total production volumes and the value of production by commodity, and, where relevant, by state/region

b) Total export volumes and the value of exports by commodity, and when relevant, by state and region

PRODUCTION VOLUME AND VALUE OF PRODUCTION

Mineral production

Production volume (i.e. quantity) is reported in tonnes for most bulk commodities (such as copper and iron ore), in ounces for precious metals (such as platinum and gold) and in carat for gemstones etc. A comprehensive list of minerals, and their units of measurement, is provided in Annex III. These data standards are based on our own experience in managing data from the extractive sector.

While different regions and companies may report production volume data in different units (lbs. vs oz.) it is recommended that all production volume be converted into similar units at time of reporting. See Annex IV for conversion units.

Production value should be reported in both US dollars as well as local currency. Production value should be based on the volume produced and should not reflect the revenue/income of the extractive company. The latter calculation includes a number of other costs and revenues that are not related to production volume.

Production value = Volume x Benchmark Price

International benchmark prices for most metallic mineral products can be sourced from the IMF[20], which reports these on a monthly basis. The coverage tends to be limited to commodities quoted on international stock exchanges. Annex III lists, by source and type, the recommended prices to be used.

For other minerals, particularly industrial minerals, international benchmarks are not easy to find, as these tend to be traded mainly through contracts, rather than international exchanges. There are three options which can be used:

- Good: Request price from operating extractive companies in the country
- Better: Use international prices, as quoted by the United States Geological Survey
- Best: Subscribe to a professional service, such as Thomson Reuters or Industrial Minerals[21] for price feeds.

There are concerns that the first two recommendations here may not be the most appropriate benchmark with regards to accuracy of international price levels, but they are available free of charge. The best recommendation will result in more accurate price levels, but does require a subscription fee.

To facilitate standardization across countries, and to ensure cost efficiency, the research team would suggest that the EITI Oslo Secretariat provide a repository of benchmark price services for all EITI implementers. The Oslo secretariat would also be better placed to negotiate access for price provision from services that require a subscription fee. The EITI Oslo Secretariat will not establish benchmark prices itself, but act as a repository of existing benchmark price subscription services that EITI implementers can utilize.

An annualized price average should be employed where possible.

Caution: For calculating production value, for metallic minerals in particular, the EITI implementer must be aware of differences between the international benchmark price and the category of the product for which volume is being reported. For example, production volume will likely be reported for copper concentrate, while the international price is for refined copper metal. A conversion factor is therefore needed to strip away the 'refined' value contained in price.

Conversion factors can differ from mine to mine, as some concentrates will have higher purity than others, and no explicit system international can be recommended for constructing these factors, they will always be estimates. However, based on our own experience in using conversion factors at the international level, recommendations are provided for select metallic minerals in Annex III. Therefore production value can be calculated as follows:

Production Value = Volume x Conversion Factor x Price[22]

Artisanal and small-scale production

Data for artisanal and small scale mining output is often difficult to calculate, as these tend to be largely informal and occasionally illegal operations. Two approaches to determining production volume are presented here.

The value of 'un-accounted' production is assigned to artisanal and small scale mining. By subtracting the known production volume (from regulated and reported volumes by companies) from the total country exports, the un-accounted production is assigned to artisanal and small scale mining operations. This estimate is not

[20] http://www.imf.org/external/np/res/commod/index.aspx
[21] http://www.indmin.com/
[22] This should be calculated as average annual realized price x total quantity

assumed to be accurate, as some artisanal production is generally expected to 'leak' through smuggling.

Given the volume of un-accounted production, the labour required to produce said production is then estimated. This estimate will differ by country; given the ease or difficulty of its geology, the geographical accessibility to possible artisanal mining locations to the general population, the nature of the mineral being mined and the general access of such miners to technology (for example panning for gold or dredging rivers).

Once an estimate is formed of the per capita production potential, the total volume assigned to artisanal and small scale mining is then used to estimate the number of artisanal miners in the country. This is a rough estimate at best, but has very little cost.

The second alternative is to perform base line surveys; investigate the regions where artisanal miners are likely to be found and tally workers. This can be a costly exercise. When the status of artisanal miners may be illegal, or not clearly defined within the law, there will be operational challenges in carrying out such a survey.

Oil and gas

Crude oil production is reported as thousand barrels/day. Oil production is also occasionally reported by weight, however we recommend that these be converted into barrels for final output. Conversion rates are provided Annex IV. While it is possible to further disaggregate oil production by crude and refined petroleum products, the latter tend to be refinery products and are not included in this report.

Natural Gas is reported as Natural Gas Processed (Million cubic meters). Natural gas production figures will normally exclude associated (flared and recycled gas), but include gas-to-liquid transformation.

For natural gas, it may be prudent to consider data for flared gas separately, as this portion of production is disposed of by burning it at point of extraction and does not contribute to revenue figures. The recommendations provided in Table 9 are based on those used by OPEC to report oil and gas production and value data[23].

The value of production can be calculated by using an international price bench mark; the Spot Crude Average of U.K. Brent, Dubai and West Texas Intermediate is the recommended price. Unlike crude oil, there are varying international benchmark for Natural Gas. The two most commonly used benchmarks are 'Russian in Germany' for natural gas (piped) and Indonesian in Japan (LNG).

Monthly prices for both oil and gas are available at IMF's Commodity price website[24].

TABLE 9 OIL AND GAS PRODUCTION VOLUME AND VALUE FORMAT

Category	Volume	Price	Price benchmark	Value
Crude oil	barrels/ day	US$/barrel	Spot Crude Average of U.K. Brent, Dubai, and West Texas Intermediate, equally weighted*	Volume x price In US$
Natural gas				
Gross production	Million standard cubic meters	$/MMBTU	Benchmark price: Russian in Germany*	Volume x price In US$
Marketed production		$/MMBTU	Benchmark price: Russian in Germany*	
Flaring			NA	
Reinjection			NA	
Shrinkage			NA	
Natural gas liquids	Million standard cubic meters	$/MMBTU	Benchmark price: Indonesian in Japan (LNG)*	

*available from the IMF Commodity Price Statistics

Other considerations

Differing fiscal years: While an EITI report specifies the years for which it presents data, companies may follow differing practices for their fiscal and tax years, depending on their jurisdiction. Some may be aligned to the calendar year (January to December) while others may use October to September reporting patterns.

Where confusion over fiscal years may occur, it is recommended to use quarterly production data and align it with the reporting year.

Currency: It is recommended that all data be reported in local currency as well as US$. The conversion between local and foreign exchange rates should be done using an annualized exchange rate. The World Bank provides official exchange rates for most countries on the World Development Indicator[25]. These are the recommended exchange rates to be used. Where data is not available from the World Bank, implementers can source this information from the country's central bank.

Metal content vs. refined metal: Some firms may choose to provide production data on refined metal as opposed to metal content of mined production, as their operations are vertically integrated. While not extremely accurate, it is possible to remove the value of the 'refined'

[23] http://www.opec.org/opec_web/en/publications/202.htm

[24] http://www.imf.org/external/np/res/commod/index.aspx

[25] http://data.worldbank.org/indicator/PA.NUS.FCRF

metal from the cost of ore, by using a conversion factor. These conversion factors will estimate the value added to the refined metal by the refining process. As stated earlier, these factors will differ from country to country and it is advisable to ask companies to report metal contained, rather than attempt a conversion.

Export Volumes and Value of Exports

The Standard International Trade Classification (SITC) Rev. 3 is the recommended international classification for reporting trade in products. The classification is provided by the United Nations Statistics Division[26] and data can be disaggregated from 2 to a 5 digit level. SITC is recommended as it is a commonly used data reporting standard, and international data is available under this classification at the US-COMTRADE[27] for a large number of countries.

SITC categorization and coding are used commonly in both academic research and other commercial databases. The categorization also benefits from being easily converted into other trade reporting formats (such as those used by the EU or USA), with conversion codes available on the UNSTATS[28] website.

The appropriate SITC code for each mineral is provided in Annex III. The data format for reporting export value is US$ and for volume data, the same format as production volume should be employed.

Specific trade codes are not available for all the listed minerals in Annex III; some minerals tend to be internationally traded in such small quantities, that they do not warrant a unique code. In these cases, they are usually categorized under 'other' and EITI implementers should refer to the national customs officials for reporting the export value.

STATE PARTICIPATION (3.6)

The EITI Requirement 3.6 (required) is defined as follows:

Where state participation in the extractive industries gives rise to material revenue payments.

Data output: Narrative + quantitative

When the extractive firm is a publicly-owned entity, the firm should follow the same data output recommendations, as for private firms, as laid out under Revenue Streams and Licenses Requirements in the report. A notation should be made to indicate if the firm is a state owned enterprise.

The data output recommendations discussed here are those which relate to revenue flows where the government is both the receiver and the payee of revenues, i.e. flows (whether in cash or in-kind) flow from the extractive entity owned by the state, to other state departments. Table 10 outlines these recommendations.

Providing the context for state participation is recommended as good practice. Inclusion of percentage equity share of the government in extractive enterprises, as well as clarification on how government participation is undertaken (through equity, contracts etc.) is recommended.

In addition, information, on the level of state control is also recommended in the narrative as good practice. Control over a company can be exerted through different means, ownership being the most common avenue used. However, with state participation, two major situations may exist. The first is when the state has majority ownership but leaves management decision to professionals. The second is when the state may have a minority ownership but can intervene in management and finance decisions.

Ownership is easier to define/measure than control as it refers to share holdings of the company. Control is more difficult to measure as it refers to the government's ability to act decisively on management issues. It can be defined as[29]:

> *To be in control is to have the possibility to act decisively on strategically important issues. Such issues include the broad policies of a company, decisions on large investments, buying or selling of subsidiaries and power to appoint or dismiss management. To be in control of a company does not necessarily include having day-to-day influence over all its decisions.*

Additional information on the assets of the company are considered as **better** practice, including employee benefits, value of investment property and differed tax liabilities.

Best practice data output recommendations cover flows from the SOEs to the government and other beneficiaries, including data on what loans have been made, to which entity and under what agreement.

[26] http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=14&Lg=1
[27] http://comtrade.un.org/data/
[28] http://unstats.un.org/unsd/cr/registry/regdnld.asp?Lg=1
[29] http://siteresources.worldbank.org/INTOGMC/Resources/GlobalMiningIndustry-Overview.pdf

TABLE 10 DATA OUTPUT RECOMMENDATIONS FOR STATE PARTICIPATION

Category	Information provided	Data format
Good		
Rules governing state participation	Granted by: Legislation or regulation Contract Other	Narrative URL link to document where available
Equity ownership	Percentage share	Quantitative
Tool for state participation	• Equity ownership • Production Sharing Agreement (Concessions governed by tax code) • Concession (Production Sharing Agreements negotiated separately) • Concession and Production Sharing Agreement (hybrid) • Production Sharing Agreement (stand alone) • Licensing Regime: Joint venture between IOC and Government • Contractual regime: Risk Service Contracts and Production Sharing Contracts • Service agreement • Mixed company structure • Production Sharing Contract, joint venture, other agreement	Classification using one of these response options
How is state control exercised	Through board of directors, investment decisions, dividend decisions etc.	Narrative /document
Better		
SOE finances		
Total assets		
Cash equivalent	Value ($)	Quantitative
Other current financial assets	Value ($)	Quantitative
Accounts receivables from related companies	Value ($)	Quantitative
Investment property	Value ($)	Quantitative
Total liability		
Accounts payable to related companies	Value ($)	Quantitative
Current tax liabilities	Value ($)	Quantitative
Current employee benefits	Value ($)	Quantitative
Deferred tax liabilities	Value ($)	Quantitative
Best		
Controlling ownership Defined as: The state has over 50% of the company votes, or is the largest shareholder with 40% of the shares, or is one of several large shareholders but also has management control of the company	Yes/No Share of company (%) Share of national production (%)	Quantitative
Payments to State		
Dividends	Total value of payment ($) In-kind*	Quantitative
Royalty (commercial)	Value ($) In-kind	Quantitative
NPI - Net profit interest	Rate of interest (%) Value ($)	Quantitative
NSR - Net smelter returns	Rate of return (%) Value ($)	Quantitative
Royalty holder	Value ($)	Quantitative

*In-kind payments should be reported with volume sold in units or revenue received in $ value.

TABLE 10 DATA OUTPUT RECOMMENDATIONS FOR STATE PARTICIPATION		
Category	**Information provided**	**Data format**
SOE beneficiaries		
Intercompany loans	Interest rate (%) Value of capital amount ($)	Quantitative
Third-party loans	Interest rate (%) Value of capital amount ($)	Quantitative
Terms of transaction	narrative / document	Narrative
Donations/grants to other institutions	Value of grant ($)	Quantitative

DISTRIBUTION OF REVENUES (3.7)

The EITI Requirement 3.7 (required) is defined as follows:

Describe the distribution of revenues from the extractive industries.

Data output: Narrative + quantitative

The data needs to illustrate where resource revenues, once received, are being allocated and document whether the allocation is being delivered. This data will contain both narrative and quantitative elements.

The good, better and best practices for data output that are recommended for this Requirement, are based on following the flow of these revenues. For example good practices refer to how the federal government receive and allocates these revenue, better reporting focus on the distribution from the federal level to state or provincial level and best refers to tracking these payments to the community level. Table 11 outlines how these data can be reported.

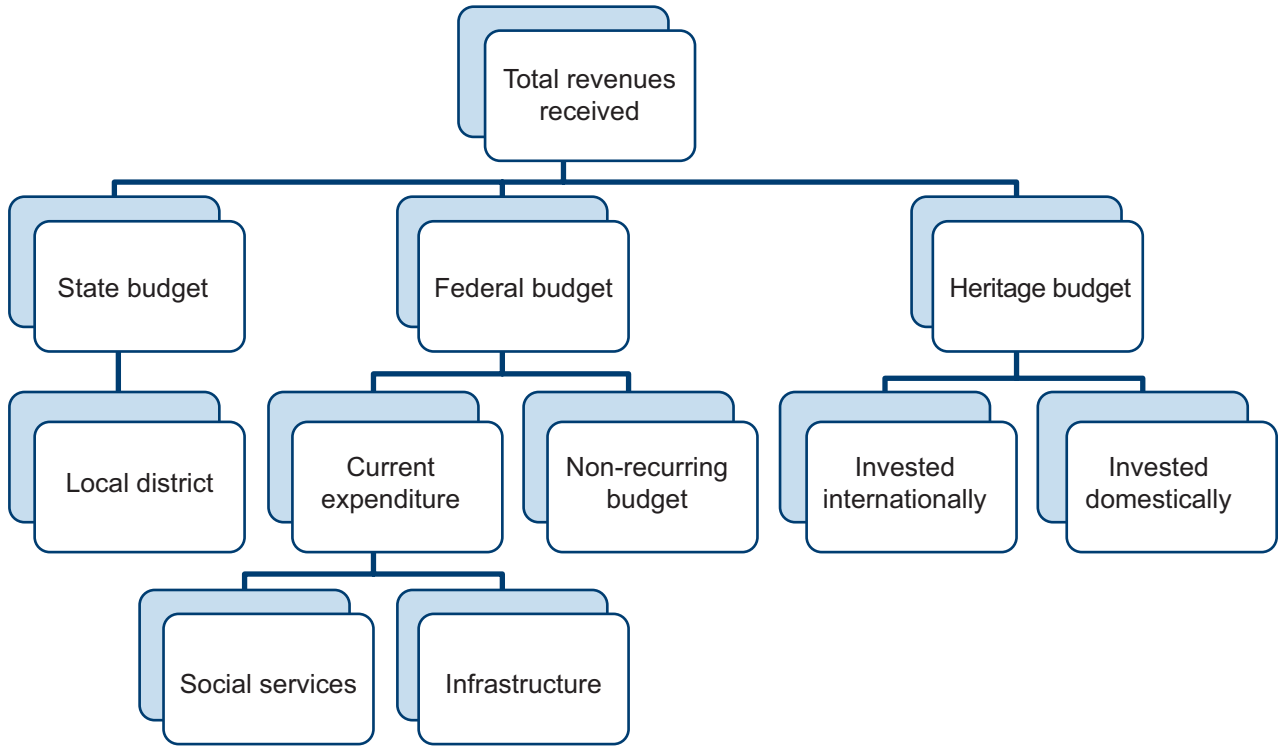
TABLE 11 DATA OUTPUT FOR DISTRIBUTION OF REVENUES FROM THE EXTRACTIVES SECTOR		
Data category	**Information required**	**Data format**
Good		
Are extractive revenues pooled into government budget or allocated to a separate fund?	Yes/No	Quantitative
Are extractive revenue distributions allocated on a discretionary basis or through a specific legal framework?	Narrative URL link to legal framework if available	Narrative
Is there a clear division in allocation of resource revenues between current expenditure and future generation (or equivalent) funds?	Yes/No Narrative	Quantitative Narrative
Is there a next generation/sovereign wealth fund for extractive revenue? If yes, is there a legal framework governing its distribution within the country?	Yes/No Narrative URL link to legal framework if available	Quantitative Narrative
What is the current value of the Sovereign Wealth Fund (or equivalent)? Report for the most recent five years	Value ($) / local currency	Quantitative
Have there been any allocations (payments) or withdrawals from the fund over the past year?	Yes/No Value ($) / local currency	Quantitative
Is there a current revenue fund for the extractive revenue? If yes, is there a legal framework governing its distribution?	Yes/No Narrative URL link to legal framework if available	Quantitative Narrative
Better		
How are EI revenues distributed between federal, district and local governments? Is there a legal framework governing its distribution?	Share of allocation (%) Narrative URL link to legal framework if available	Quantitative Narrative
Are there direct revenue payments to local communities? If yes, how is the level of payments determined?	Yes/No Narrative URL link to legal framework if available	Quantitative Narrative

TABLE 11 DATA OUTPUT FOR DISTRIBUTION OF REVENUES FROM THE EXTRACTIVES SECTOR		
Data category	**Information required**	**Data format**
Best		
What is the value of allocation of revenue between the federal and regional governments	Value ($) / local currency	Quantitative
To what extent has this allocation been carried out?	Allocation that has been transferred (%)	Quantitative
What share of total revenues received from the mine/firm go directly to local communities/government?	Share of total revenues (%) Value ($) / local currency	Quantitative
How are the payments to local communities governed? (legal or contractual agreement)	Narrative	Narrative

VISUALIZATION

The data for distribution of revenues should reflect how the total extractive revenues received by the government filter through the rest of the economy. This can be done effectively by using a flow chart as illustrated in Figure 4.

FIGURE 4 FLOW CHART ILLUSTRATING DISTRIBUTION OF REVENUES ($ VALUE OR LOCAL CURRENCY)



FURTHER INFORMATION ON REVENUE MANAGEMENT (3.8)

The EITI Requirement 3.8 (encouraged) is defined as follows:

a) A description of any extractive revenues earmarked for specific programmes or geographic regions. This should include a description of the methods for ensuring accountability and efficiency in their use.

b) A description of the country's budget and audit processes and links to the publicly available information on budgeting, expenditures and audit reports.

c) Timely information from the government that will further

public understanding and debate around issues of revenue sustainability and resource dependence. This may include the assumptions underpinning forthcoming years in the budget cycle and relating to projected production, commodity prices and revenue forecasts arising from the extractive industries and the proportion of future fiscal revenues expected to come from the extractive sector.

Data output: Narrative

Reporting is encouraged for this Requirement and is expected largely in the quantitative form. The criterion for what is to be included under this heading is determined by the deliberations of the multi-stakeholder group and will therefore differ from country to country. The recommended data output outlined in Table 12 is based on the IMF's recommendations for public financial management in resource producing countries[30] and the research team's own recommendations.

Good practice would be to document what public financial management framework is in place to manage extractive revenues.

Better practice could include detailing what information is provided by the government to further public understanding of the extractive revenue management framework.

Best practice could outline any specific programmes that have been earmarked extractive revenues.

[30] https://www.imf.org/external/pubs/ft/wp/2010/wp1072.pdf

TABLE 12 DATA OUTPUT FOR REPORTING ON REVENUE MANAGEMENT

Data category	Information required	Data format
Good		
Is there a separate resource revenue account (RRA) in which extractive revenues are deposited?	Yes/No	Quantitative
Is there a separate Investment Committee for establishing an extractive revenues investment strategy?	Yes/No	Quantitative
Is there a specific resource revenue management law?	Yes/No Narrative URL link to legal framework if available	Quantitative Narrative
Better		
Is information on the resource reserves' contribution to the government net wealth included in the budget document?	Yes/No	Quantitative
Is information on the extractive revenues contribution to financing the budget deficit included in the budget document?	Yes/No	Quantitative
Is a long-term assessment of resource revenues included in the budget document?	Yes/No	Quantitative
Best		
Extractive company	Name and location	Text
Local communities	Specify which communities are the recipients	Narrative
Commitment made	Description of the nature of project/in-kind payment etc. that has been agreed	Narrative
Duration of investment	The time schedule for the delivery of the agreed project and duration start and end date No of years	Quantitative
Investment	Value of the project: *Can be based on the expenditure made by the extractive company* • Value ($)/ local currency • In-kind payment	Quantitative
Delivery	Is the delivery on schedule? Have there been delays or disputes?	Narrative
Post-delivery ownership	Has an agreement been reached over the ownership and responsibility of upkeep of the project, once it has been delivered?	Narrative

REGISTER OF LICENSES (3.9)

The EITI Requirement 3.9 (required) is defined as follows:

a) License defined as "any license, lease, title, permit, or concession by which the government confers on a company(ies) or individual(s) rights to explore or exploit oil, gas and/or mineral resources".

b) Register of licenses defined as "a publicly available register or cadastre system(s) with the following timely and comprehensive information regarding each of the licenses pertaining to companies covered in the EITI Report"

Data output: Quantitative + spatial + narrative

The data output for this standard requires information can be drawn from the register of licenses (whether online or a paper register) and data categories require information on ID numbers for allocated licenses, the owner of these licenses and their location. The data categories covered include details on the property, its location (geospatial data), the registered owners and details of the license itself.

These data categories are provided in Table 13 with recommendations on what information should be provided and the format this should take. The recommendations for this EITI Requirement are based on provision of greater detail within each category.

Additional information:

Other information that could be provided through spatial data and/or a narrative could include the following:

- Information on restricted/reserved areas where extractive activity is not permitted.
- Overlapping land use designations i.e. national park, ancestral lands etc.
- Whether previously available areas have been withdrawn, and why.
- Major water bodies in the area (such as lakes and rivers).
- For off-shore oil extraction, country boundaries and whether there any international boundary disputes issues exist for the area.

Online Cadastre systems have gained popularity in recent years, and a number of countries employ such portals to display license information.

FlexiCadastre (provided by Spatial Dimensions) is used by a number of African and other countries; Botswana, DRC, Kenya, Namibia, Mozambique, Papua New Guinea, Rwanda, South Sudan, Tanzania, Uganda and Zambia. None of these portals provide download functionality, however users do not need to register to use the portal. Annex II provides a comparison of data and format displayed for these countries within the FlexiCadastre systems.

Mining Cadastre Administration System (MCAS) is the other emerging used online system. It is provided by Revenue Development Foundation (RDF) and is currently operational in the following countries: Mali, Sierra Leone (in progress), Liberia and Ghana (in progress).

Of these countries, none of the portals currently provide download functionality; RDF has said that a trial method of accessing the data via an application program interface (API) will be available in June 2015. Users do need to register to access the system.

In general, on-line systems may require the user to register before access is granted. Depending on the system, free access may be restricted to just visualizing the data and downloading of data may not be available. On-line systems will also tend to have limited historical information on transfer or licenses. The advantage is these systems are updated at regular intervals and in general they will have the latest information available.

TABLE 13 DATA OUTPUT FOR REGISTER OF LICENSES

Data category	Information included	Data format	Recommendation
Property details			
Property identifiers	Property name License number Block id number	Narrative Text Text	Good
Location	State/Province District	Text	Good
Commodities	List commodities for which license is applicable	Text	Good
Area	Area held under license in hectares	Hectares Up to 2 decimal points	Good
Geospatial data (license polygons represented on map/online cadastre)			
Coordinate system	Local coordinate system	Spatial data file	Better
Coordinate system	WGS84, latitude, longitude (geographic coordinate system) EPSG:4326 European Petroleum Survey Group Code for the coordinate reference system	Spatial data file	Best
Ownership details			
Owner(s)	Registered owners Company registration number Tax registration number	Text	Good
Contractor	For construction/production sites, list contractor if different from owner	Text	Best
Share of holdings if jointly held	Share of each owner (%)	Share (%)	Better
Other claims owned by the same owner	List property name/id number of property	Text Number format	Best
Previous owner, if transferred in past two years	Name of previous owner	Text	Best
License details			
License type	Title[a]	Text	Good
Application date	Registered application date	DD-MM-YYYY	Good
Date granted	Registered grant date	DD-MM-YYYY	Good
Expiry/ first renewal date	Indicate original expire date Include if renewal has been granted	DD-MM-YYYY Yes/no Duration (no of years)	Better
Date of refusal	Registered refusal date	DD-MM-YYYY	Better
Reason for refusal	Description	Narrative	Best
Current status	Describes status of activity[b]: • Active • On-hold • Inactive	Classification	Better
Information last updated	Date	DD-MM-YYYY	Best
Any exemptions offered	Narrative	Qualitative	Best
Work to be performed as License requirement	Narrative	Qualitative	Best
Source of data	• datasets extracted/exported from the registry database • the licenses held by a particular company	Classification	Good

a: this should closely follow the titles laid out in Table 5 under EITI Requirement on Legal and Fiscal Regime Context.
b: should closely follow the activity status as laid out in the section on Contribution of Extractive Industry

ALLOCATION OF LICENSES (3.10)

The EITI Requirement 3.10 (required) is defined as follows:

a) Implementing countries are required to disclose information related to the award or transfer of licenses pertaining to the companies covered in the EITI Report, including: a description of the process for transferring or awarding the license; the technical and financial criteria used; information about the recipient(s) of the license that has been transferred or awarded, including consortium members where applicable; and any non-trivial deviations from the applicable legal and regulatory framework governing license transfers and awards.

b) Where licenses are awarded through a bidding process during the accounting period covered by the EITI Report, the government is required to disclose the list of applicants and the bid criteria.

c) Where the requisite information set out in 3.10(a) and 3.10(b) above is already publicly available, it is sufficient to include a reference or link in the EITI Report.

d) The multi-stakeholder group may wish to include additional information on the allocation of licenses in the EITI Report, including commentary on the efficiency and effectiveness of these systems.

Data output: Narrative + quantitative

The data points under this standard refer to the specifications of area, duration, limitations and any financial payments required for the allocation of licenses.

Countries may have different titles for licenses/permits, but they will generally fall under the categories listed in the section on Licensing Regulations.

A narrative should be provided to cover the information required for:

- The award or transfer of licenses pertaining to the companies covered in the EITI Report.
- If licenses are awarded through bidding process; the list of applicants and the bid criteria.
- Commentary on the efficiency and effectiveness of these systems (*encouraged*).

This information will be delivered as a narrative; in addition there are particular data categories that can be generated for this Requirement, listed in Table 14.

No specific good, better and best recommendations have been provided within this table, as this information can both be covered under the narrative as well as a data output. At the minimum, good practice would be to outline the allocation process and the criterion.

TABLE 14 DATA OUTPUT UNDER ALLOCATION OF LICENSES

Data category	Information included	Data format
Allocation process		
Is there a minimum evaluation criterion applicable?	Yes/No Narrative describing the criterion	Qualitative URL link if available
Allocation criterion	Specify: First come first served Open bidding Selection board Hybrid Preference/barter arrangements	Classification
Is there a limit on number of licenses that can be granted to one entity?	Yes/No Narrative on what governs such limitations	Qualitative
Can minister/executive authority overrule decisions from licensing board?	Yes/No Narrative on what governs this decision making	Qualitative
Are there limitations on transfer of licenses?	Yes/No Narrative on how transfers can take place	Qualitative
Disputes over license allocation?	Narrative if appeals have been filed against license allocations	Qualitative
Details for bidding process		
Name Title for bid, as advertised Bid criterion Date of advertisement for bid Date for opening of bids Date for announcement of bid winner	Text DD-MM-YYYY	URL link if available

BENEFICIAL OWNERSHIP (3.11)

The EITI Requirement 3.11 (required) is defined as follows:

A beneficial owner in respect of a company means the natural person(s) who directly or indirectly ultimately owns or controls the corporate entity.

Data output: Narrative + quantitative

The first step is to identify what constitutes beneficial ownership; the research team has the following recommendations:

If the legal framework/regulations for the country define levels of beneficial ownership, these should be used.

The Multi-Stakeholder Group (MSG) may wish to set its own criterion for what it considers 'beneficial ownership', depending on the size of the extractive industry sector.

Where limits are not provided within legal frameworks, the following thresholds can be considered:

- An individual or company holding more than a certain percentage (as set by the MSG) of the company shares will be considered a beneficial owner. This threshold will differ from country to country, for example in Democratic Republic of Congo, the threshold is set at 25% while in Honduras it is 5%.
- Cumulative share criterion is where private/public limited companies shall disclose their 20 largest shareholders and ownership stakes held by them. Information on anyone holding less than 1% of the shares/stakes can be omitted.

  For small enterprises, this can be dropped to the top 10 shareholders and omission of anyone with less than 5% of ownership.
- A combination of the above can also be employed. For example a person is deemed to have control over the company if they hold 50% or more of the firm's shares, and/or can accept or decline appointments of half/more than half of the board.

Where a small number of large projects account for more than 60% of production value, it is advisable to use the ownership criterion.

Where a larger number of medium to small sized operations account for more than 50% of total production value, cumulative share criterion may prove more useful.

It is difficult to quantify the threshold for 'number' of projects here, as country cases will differ. In some countries one to four large projects may account for a significant proportion of the country's mineral production. The EITI Implementer should discuss the threshold to be used with the MSG. As these thresholds will vary from country to country, the report should define the agreed limit with the text.

Better: The Multi-Stakeholder groups may also consider beneficial ownership in license holding, where a single entity may hold large areas of land for exploration and prospecting purposes.

The information collected under EITI Requirements 3.9 and 3.10 on licensing can be used as the basis for calculating share of land held by a single entity. While the former will list ownership, whether that ownership constitutes as 'beneficial' should be made clear under this heading.

Once the definition of beneficial ownership has been agreed upon, data output within the categories table can be generated. The better and best recommendations are based on providing a greater level of disaggregation for each data category in Table 15.

Good practice would be to first identify whether there are any beneficial owners, and if these owners are in the form of individuals or firms. **Better** practice would be to provide details on the beneficial owners and the extent of their stake in the business. Finally, **Best** practice would be to provide information on whether these individuals have political exposure.

TABLE 15 DATA OUTPUT FOR BENEFICIAL OWNERSHIP

Data category	Information included	Data format
Good		
Company name	Text	Text
Registration number	Number	Text
Type of entity	Specify legal registration: Sole ownership Private/public listed Joint venture Other (specify)	Text: Categorize using one of these response options

TABLE 15 DATA OUTPUT FOR BENEFICIAL OWNERSHIP

Data category	Information included	Data format
Activity by business sectors	Minerals Oil and gas Larger business conglomerate with other non-extractive businesses Other (specify)	Text: Categorize using one of these response options
List of board members	Text Name and position on board Share of holding (%)	Text URL link to corporate register is applicable
Is there incidence of beneficial ownership?	Yes/No	Quantitative
List of shareholders with beneficial ownership Individuals Holding companies	Text % share of holding	Text
Better		
For each listed beneficial owner (individual)	Name Nationality Country of residence Means of contact	Text URL link to corporate register is applicable
For each listed beneficial owner (firms)	Share of holding company in entity (%) List of board members of holding company	Quantitative Qualitative - URL link to corporate register is applicable
Best		
For those listed as beneficial owner (individual or on the board of holding company)	Is there a politically expose person on the board? If yes, provide the following information for them: Position and role When beneficial ownership was acquired	Quantitative Narrative

CONTRACTS (3.12)

The EITI Requirement 3.12(required) is defined as follows:

a) Implementing countries are encouraged to publicly disclose any contracts and licenses that provide the terms attached to the exploitation of oil, gas and minerals.

b) It is a requirement that the EITI Report documents the government's policy on disclosure of contracts and licenses that govern the exploration and exploitation of oil, gas and minerals. This should include relevant legal provisions, actual disclosure practices and any reforms that are planned or underway. Where applicable, the EITI Report should provide an overview of the contracts and licenses that are publicly available, and include a reference or link to the location where these are published.

c) The term contract in 3.12(a) means:

- *the full text of any contract, concession, production-sharing agreement or other agreement granted by, or entered into by, the government which provides the terms attached to the exploitation of oil gas and mineral resources;*
- *the full text of any annex, addendum or rider which establishes details relevant to the exploitation rights described in 3.12(c)(i) or the execution thereof; and*
- *the full text of any alteration or amendment to the documents described in 3.12(c)(i) and 3.12(c)(ii).*

d) The term license in 3.12(a) means:

- *the full text of any license, lease, title or permit by which a government confers on a company(ies) or individual(s) rights to exploit oil, gas and/or mineral resources;*
- *the full text of any annex, addendum or rider that establishes details relevant to the exploitation rights described in in 3.12(d)(i) or the execution thereof; and*
- *the full text of any alteration or amendment to the documents described in 3.12(d)(i) and 3.12(d)(ii).*

Data output: Narrative + quantitative

This requirement pertains to the disclosure of contract information in a comparable and accessible format. Table 16 details how relevant contract information should be reported; drawing upon the frameworks outlined in the

Open Contracting data standard project[31] and the Model Mining Development Agreement[32], and includes recommendations from the research team.

Good practice in this category requires disclosing quantitative and narrative data that provides an overview of any contracts between the government and extractive companies. The information required, detailed in Table 16, includes descriptive data, information on the contract status, start and end date, its value, the company with whom it was entered into, and the date it was signed.

As well as providing this contract information, better reporting practices would entail attaching all documents related to the contract, including any notices. Building upon this, best practice would also include information about the implementation of the contract. This should include a list of spending transactions and any important milestones reached.

In some countries, extractive transactions may not be based on contracts, but general standard licensing agreements. Where this is the case, links should be provided to the legal frameworks that cover these arrangements.

[31] http://standard.open-contracting.org/

[32] https://www.iisd.org/sites/default/files/pdf/2013/mmda_transparency_report.pdf

TABLE 16 CONTRACT REPORTING OPTIONS

Field name	Description	Information included		Data format
		Response f ormat options	Response example	
Good				
Title	Contract title	The full title of the contract	The full title of the contract	Text
	Contract context	This response should detail whether the contract is part of a larger package transaction	Yes/No	Text
		A brief description of the role of this contract within the larger package	e.g. mine development agreement, operating agreement, shareholders' agreement, guarantees and financing agreements etc.	Narrative
Description	Contract description	A brief description of the contract	A brief description of the contract	Narrative
Status	The current status of the contract	**Pending** - This contract has been proposed, but is not yet in force. It may be awaiting signature	Include the most appropriate of these four response options	Classification
		Active - This contract has been signed by all the parties, and is now legally in force		
		Cancelled - This contract has been cancelled prior to being signed		
		Terminated - This contract was signed and in force, and has now come to a close. This may be due to successful completion of the contract, or may be early termination due to some non-completion		
Contract start date	State date	This response should state the contract start date	DD-MM-YYYY	Text
Contract end date (or term)	End date	This response should state the contract end date	DD-MM-YYYY	Text
Contract provisions	Obligations	This response should outline obligations on the extractive company contained within the contract.	These may include expenditure, infrastructure and local employment requirements, etc.	Narrative
	Fiscal provisions	The fiscal elements detailed within the contract	These may include license and area fees, taxes, royalties, signing bonuses; tax exemptions etc.	Narrative

TABLE 16 CONTRACT REPORTING OPTIONS

Field name	Description	Information included		Data format
		Response f ormat options	Response example	
Signatories	Extractive company identification	Name of the organization and user registration number/ tax identification number	Name User registration number Tax identification number	Text
	Address and contact point of the Extractive company	Street address Locality Region Postal code Country name Phone Web address	Avenue SGAN- Quadra 603 conjunto J, Parte A - 1 andar Brasilia 70830-030 Brazil +55 61 2192 8552 www.cprm.gov.br	Text
	State	The government department/ agency that authorizes the contract.	The specific department/ agency title	Text
Date signed	The date the contract was signed	This response should state the date the contract was signed. In the case of multiple signatures, the date of the last signature	DD-MM-YYYY	Text
Better				
Documents	All documents and attachments related to the contract, including any notices	Document type e.g – • Feasibility study • Environmental Impact Assessment • Social Impact Assessment	Specify the document type	Text
		Document title	The full title of the document	Text
		A short description of the document	Open contracting recommends that these descriptions do not exceed 250 words. In the event the document is not accessible online, the description field can be used to describe arrangements for obtaining a copy of the document	Narrative
		URL	Direct link to the document or attachment	Text
		Date Published	DD-MM-YYYY	Text
		Date the document was last modified	DD-MM-YYYY	Text
Best				
Implementation	Information related to the implementation of the contract	A list of the spending transactions made against this contract	The date of the transaction	Text
			The value of the transaction	Quantitative
			The organization identifier for from which the funds in this transaction originate	Text
			The organization identifier for who receives the funds in this transaction	Text
		As they are completed, milestone completions should be documented	Milestone title	Text
			A description of the milestone	Narrative
			The date the milestone is due	DD-MM-YYYY

REVENUE STREAMS + CONTINUED (4.1)

The EITI Requirement 4.1 (required) is defined as follows:

Describe the taxes and revenues from the extractive industries:

- Definition of 'materiality'
- Description of each revenue stream
- Revenue streams broken down by company
- Revenue streams broken down by project
- Revenue from sales of state's share of production
- Revenue from sales broken down by transaction
- Costs of infrastructure investments
- Social expenditures
- Transportation of oil, gas and minerals

Data output: Quantitative + narrative

The definition for materiality, to be used within an EITI Country Report, is set by the multi-stakeholder group and should be provided as a narrative. The following thresholds were noted in the sample of EITI Reports surveyed for this project:

- All specific payments related/mentioned in the mining code were included.
- Any flow that exceed a threshold level of total extractive revenue flows to government, either set as dollar value or cumulative share (as a percentage). For example:
  - o All companies where payments cumulatively constitute 70% of total mining revenues in previous year. For oil and gas this was set at 95%.
  - o All companies that paid in excess of $2.5 million of royalties in the previous report. Cumulatively 90% of all royalty payments.
- Where revenue payments may be less than 1-5% but the impact of the companies actions are deemed to be important, the company was included.

For defining the data category for revenue streams, the research team first constructed data categories that include the most commonly referred to/used revenue streams as reported in EITI Country Reports and in other transparency initiatives. These were then reconciled with revenue categories provided by the IMF in its Government Finance Statistics Manual (2014)[33], IMF's Fiscal Analysis of Resource Industries[34] and suggestions presented in IMF (2014) Template to Collect Data on Government Revenues from Natural Resources[35].

The two sets are largely compatible; however the IMF schema is better suited to aggregate levels of revenue category data reporting. For the nuances that are regularly reported in EITI Country Reports, a greater level of disaggregation is warranted; particularly for contributions to local communities, whether in cash or in-kind. The latter are not found in the IMF schema.

Table 17 presents the data categories as recommended by the research team, with the last column indicating the equivalent IMF GFSM (2014) coding and description. In some categories, an equivalent GFSM code could not be identified. As the data output for this Requirement focuses on the value of the revenue stream, all data should be reported in both US Dollars and the local currency.

The format for the data points presented below provides descriptions for the quantitative data only. A narrative explaining each of these data headers is recommended. In addition, each category in column one should be read as those applicable to the natural resource enterprises.

[33] http://www.imf.org/external/Pubs/FT/GFS/Manual/2014/gfsfinal.pdf
[34] http://www.imf.org/external/np/fad/news/fadtools.pdf
[35] https://www.imf.org/external/np/sec/pr/2014/pr1454.htm

TABLE 17 DATA OUTPUT FOR FISCAL REGIME BY REVENUE CATEGORY

Data category	GFSM (2014) Code	Description in GFSM
License and concession fees	11452	Other taxes on use of goods and on permission to use goods or perform activities
Application fees		
Annual fees		
Acreage fee (oil and gas)		
Transit fee (oil and gas)		
Rental fee		
Transportation and terminal operations fee		
Environment related		
Water use		
Land use		
Entry fees		
Service charges (for government services)	1422	Administrative fees
Service fees (to government)		
Profits taxes		
Corporate income tax	1112	Taxes on income, profits, and capital gains (payable by corporations and other enterprises)
Profit tax		
Variable income tax		
Withholding tax (dividends, interest and fees)		
Windfall tax	1112	Extraordinary profits
Personal income tax	112	Taxes on payroll and workforce
VAT/Sales tax (net)	1141	General taxes on goods and services
VAT	11411	Value added tax
Sales	11412	Sales tax
Excise duty	1142	Excises
Real estate tax	1415	Rent
Penalties	1161	Other taxes payable solely by business
Social security contributions	12	Social contributions
Employee contributions	1211	Social security employee contributions
Employer contributions	1212	Social security employer contributions
Stamp duties	11457	Other taxes on use of goods and on permission to use goods or perform activities
Land tax	1415	Rent
Tax on vehicles and self-moving mechanisms	11451	Motor vehicle taxes
Local/district taxes		*No equivalent identified*
Capital gains tax	111	Taxes on income, profits, and capital gains
Royalties and bonuses		
Resource rent tax	1112	Taxes on income, profits, and capital gains (payable by corporations and other enterprises)
Royalties (as applicable)	1415	Rent
Ad-valorem (percentage of product value)		
Ad-valorem progressive with price		
Ad-valorem progressive with production		

TABLE 17 DATA OUTPUT FOR FISCAL REGIME BY REVENUE CATEGORY

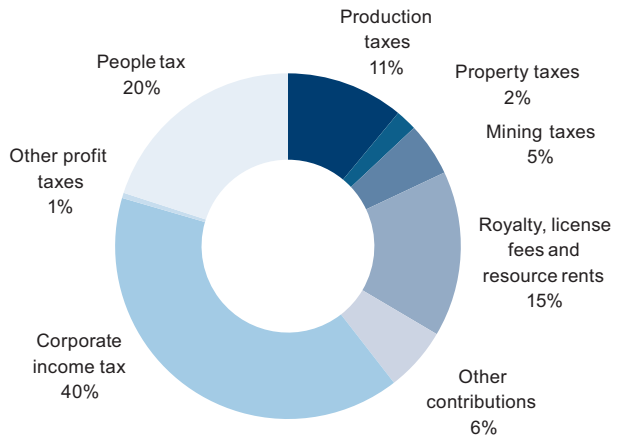
Data category	GFSM (2014) Code	Description in GFSM
Ad-valorem progressive with operating ratio/profit		
Royalty applied to operating margin (net profits royalty)		
Production tax	1415	Rent
Bonuses	1415	Rent
Signature bonuses		
Discovery bonuses		
Production bonuses		
Production entitlements enterprises		
Compulsory social infrastructure payable		
Payments to landowners (where applicable)	1415	Rent
Pollution tax	114522	Pollution taxes
Trade related revenue flows		
Import/customs duty	1151	Customs and other import duties (import taxes)
Import duties		
Import taxes		
Customs office and service fees	1151	Customs and other import duties
Export duties/tariffs	1152	Taxes on exports
Export duties		
Export taxes		
Dividends and state entitlements		
Profit tax if state owned company	1143	Profits of fiscal monopolies
Dividends from government owned natural resource enterprises	1412	Dividends
Dividends from government participation in natural resource enterprises	1412	Dividends
Withdrawal of income from quasi - corporations*	1143	Profits of fiscal monopolies
Profit remitted to government by SOEs	1153	Profits of export or import monopolies
Sales of state's share of production or other revenues collected in kind: • Volume sold - unit • Revenue received - $ value	1415	Rent
Grants and donations		
Donation to support to state owned organizations	13	Grants
Grants from foreign governments	131	From foreign governments
Grants from international organizations	132	From international organizations
Investment in construction and maintenance of infrastructure	144	Voluntary transfers other than grants
Local community development expenditure by companies	13	Grants

* Quasi corporations are defined as ' unincorporated enterprises that function as if they were corporations, and which have complete sets of accounts, including balance sheets'; OECD Glossary of Statistical Terms: https://stats.oecd.org/glossary/detail.asp?ID=2225

VISUALIZATION

The visualization of this data is recommended through graphs, as these can quickly present the share of each revenue category to the total pool. Table 18 is an example to illustrate this.

TABLE 18 TAXES AND CONTRIBUTIONS BORNE



Source: PricewaterhouseCoopers (2012)

ASSESSMENT AND RECOMMENDATIONS FROM THE INDEPENDENT ADMINISTRATOR (5.3)

The EITI Requirement 5.3 (required) is defined as follows:

a) In accordance with the Term of Reference, the Independent Administrator should prepare an EITI Report that comprehensively reconciles the information disclosed by the reporting entities, identifying any discrepancies.

b) The Independent Administrator should produce electronic data files that can be published together with the EITI Report. Summary data from each EITI Report should be submitted electronically to the International Secretariat according to the standardised reporting format provided by the International Secretariat.

c) The EITI Report should include an assessment from the Independent Administrator on the comprehensiveness and reliability of the data presented, including an informative summary of the work performed by the independent administrator and the limitations of the assessment provided. Based on the government's disclosure of total revenues as per Requirement 4.2(b) the Independent Administrator should indicate the coverage of the reconciliation exercise.

d) The assessment should include an assessment of whether all companies and government entities within the agreed scope of the EITI reporting process provided the requested information. Any gaps or weaknesses in reporting to the Independent Administrator must be disclosed in the EITI Report, including naming any entities that failed to comply with the agreed procedures, and an assessment of whether this is likely to have had material impact on the comprehensiveness of the report.

e) It is required that the EITI Report documents whether the participating companies and government entities had their financial statements audited in the financial year(s) covered by the EITI Report. Any gaps or weaknesses must be disclosed. Where audited financial statements are publicly available, it is recommended that the EITI Report advises readers on how to access this information.

f) The Independent Administrator may wish to make recommendations for strengthening the reporting process in the future, including any recommendations regarding audit practices and reforms needed to bring them into line with international standards. Where previous EITI Reports have recommended corrective actions and reforms, the Independent Administrator should comment on the progress in implementing those measures.

Data output: Narrative

The data category required for this standard will be in the narrative form and will differ from country to country. However, it is recommended that these assessment and recommendations be categorized under the following headings, where applicable:

- Data collection and processing constraints (particularly where auditing standards were an issue)
- EITI process related issues (unclear understanding by participants, non-reporting by companies etc., time constraints)
- Human resource constraints (where lack of capacity or skills led to incomplete or problematic reporting)
- Stakeholder constraints (if political will or commitment may have been an issue)

Good practice for this Requirement would be to report the issues that have arisen, associated with the stake holders/agencies where these issues were faced. **Better** practice would provide insight into why these issues are being faced; as in lack of understanding, staff shortages, political will. **Best** practice would be for the independent assessor, to make recommendations, on their experience, to address the issues that have been highlighted.

CONCLUSION

The objective of this report was to present, in structured form, data categories and their reporting formats, that can be used to standardize information generated under EITI Requirements. The review conducted for this study included a sample of recent EITI Country Reports, as well as other initiatives and industry standards.

These recommendations should be considered as a first step towards standardizing data reporting under EITI Requirements, and need to be tested with future EITI reporting to identify issues with data collection under the headings as categorized in this report.

We would recommend a step by step approach to this, starting with a specific set of Requirements, across a number of countries. This will allow the EITI secretariat to develop a set of comparable statistics for various reporting entities, as well as start constructing guidelines for EITI implementers.

The following EITI Requirements are recommended for the first phase of this exercise, as the research team considers these to be the core of an EITI Country Report. Also, given the review of EITI reports, we believe that these will be the easiest to standardize, as the most consistent data tends to be collected in these categories across Country Reports. These figures are more likely to lend themselves to cross-country comparisons, such as;

- Overview of extractive industries.
- Contribution of extractive industries to the economy.
- Production Data.
- Revenue Streams.

Within this exercise, the data collection methods and process should be given special emphasis, so not only are the data categories standardized, but also the methodology for collecting/collating this information. The exercise should focus on taking information in the public domain (such as Annual Report and International Exchange filings) and creating equivalence with EITI data categories.

The eventual outcome would be the development of EITI reporting forms that implementers and MSGs can consider using for their Country Report preparations.

In the next phase, data on Legal and Fiscal context, and Licensing data should be consolidated. The third phase can focus on the remaining Requirements, as they tend to be more complex and country specific.

Second, we consider data collection and its formats to be fundamentally linked to how this data will be presented; the user interface. As the World Bank and EITI Secretariat move forward in the data standardization exercise, the research team strongly emphasis the need to consider the user interfaces at an earlier rather than later stage in the process. This will also allow for data access issues to be addressed in a more structured form. The eventual user interface and how it interacts with other extractive transparency portals, will also impact how data is collected under various data categories outlined in this report.

Third, we would encourage the EITI Secretariat/World Bank to take on the responsibility of some of the data categories, such as international benchmark prices, macro-economic indicators such as GDP, total employment, total exports/imports etc.

Within licensing, we have found that a number of cadastre projects are being supported/funded by the World Bank in developing countries. As noted, FlexiCadastare systems tend to disallow the downloading of spatial data. An agreement may be reached with the service providers to allow such access to be provided to the EITI Oslo Secretariat.

Fourth, the research team would caution against the development of a ‘big data’ approach, where large amounts of information are generated/collected without the tools to organizing and present this information. Given the slow access to internet facilities for some countries, access for country stakeholders may become more cumbersome if raw data is made available without accompanying tools for ease of use.

SECTION 3: DATA ACCESS

The objective of this section is to consider the technical aspects of providing the information normally presented in non-automated form (such as PDF documents), in machine readable forms, that would increase the accessibility of these reports for a wider audience.

This looks at the possible reporting languages that can be employed, that will allow for a wider accessibility for data exchanges and content management systems, to include and present EITI reported information.

In addition, these processes need to heed open data requirements, to as large an extent as possible, as public access is important for transparency. Open data or open content is defined as "data and content [that] can be freely used, modified, and shared by anyone for any purpose"[36]. Increasing use of open data is meant to improve the quality of information in the public domain as well as computability between reservoirs of information.

Finally, the solutions being reviewed in this section are meant to be low-cost, high value software programs, and those systems that are being currently employed by other initiatives that could be users of EITI information.

This section approaches the task in two steps. First is to review programs/languages for incoming EITI reports/ data that would be suitable for the countries that report on the initiative. The second would be to link this incoming format with outgoing format that would influence the likelihood of being used by a multitude of other initiatives and users.

Narratives and qualitative data are subsumed within the larger discussion of reporting languages and formats, as issues related to this segment tend to be the same. Spatial data is then discussed as a separate category, as the file format and access process for these data are different from those discussed for quantitative and qualitative data.

TABLE 19 STEPS IN DEVELOPING DATA ACCESS

	Product	Characteristic	Determined by
1	Report (data/narrative)	Non-automated analysis	Word, Excel, PDF
2	Machine readable document	Structured for computational processing	Reporting languages based
3	Data exchange	Incoming data is restructured to conform to outgoing data	Responds to/ determined by reporting languages
4	Content management systems	Programming that allows for publishing, editing and modification of data stored in its repository	Uses incoming information, stores and redeploys it, usually to provide a user interface.

The basic process of data access is presented, in Table 19. The first stage is a simple document/file that can be processed by commonly used computer software programs, such as Microsoft Office etc. These files are easy to produce and upload, and are meant for human consumption, i.e. the ability for machines to read these products are limited.

Such files can be converted into machine readable documents, i.e. computers can process the data (whether narrative or otherwise) contained, as these are structured (coded) for processing. There are a number of 'reporting languages' that can be used to construct machine readable documents. Machine readable documents can be opened by common programs such as Microsoft Office.

Machine readable documents can then be used as 'incoming information' into data exchanges, which will have the capacity to take these documents and convert the contained information into 'outgoing' information. As the name suggests, these programs function as an exchange for incoming and outgoing information.

This outgoing information can then be picked up by content management systems, which can act as a repository and/or stream data from other sources. The function of the content management system is to be able to display this information in whatever format is chosen. Any user interfaces will have a content management system working behind to support the information that is being displayed.

The entire process can then be understood, for example, as taking a Word document, converting it into a machine readable format, allowing the information stored within the document to go through a data exchange standard, which will allow a multitude of other programs to access and publish the information contained.

Each step within the above process can range from manual to completely automated, depending on the sophistication of the programming used. There are a number of products (such as XML, XBRL, JSON) that can be used from the second step onwards.

EITI reporting is currently at the first stage of the process illustrated in Table 19, i.e. as PDFs and Excel sheets. The next step would be to 'upgrade' these reports into machine readable formats. The discussion here takes a step by step approach to moving from non-automated structures to formats that would be accessible for content management systems.

As per the terms of reference, this report does not cover the final user-interface, whether as an EITI website or other transparency websites.

[36] http://opendefinition.org/

STEP 1: CONVERSION TO MACHINE READABLE FORMATS

Factors to consider for choosing a machine readable format are as follows:

- The reporting language must be in wide usage and easy/free to access.
- The language format must be easy to use and not require extensive training and capacity for the formatter.
- The reporting language must allow for simple and complex tagging, so more complex information can be formatted over time.
- Languages already commonly in use would offer the advantage of having a tagging/label list ready, that can be used/modified for EITI purposes.
- The language must be supported further down the access chain, i.e. data exchange standards etc. should be able to use the language.
- The language must not be exclusive, i.e., once coded the information must be usable by a multitude of computer programs rather than restricted to a few platforms.

The most commonly used machine readable formats for narrative and quantitative data are XML, XBRL and JSON.

XML - Extensible Mark-up Language

This is the most commonly used reporting language, that allows for encoding documents, by a set of rules, which has the advantage of being both machine and human readable. The language was primarily designed to describe data and not so much to display data. Describing data refers to XMLs ability to tag data, allowing users to define their own tags and document structure.

XML is freely available and can be read by a large number of programs, particularly websites, as well as applicable programming interfaces (APIs).

A major drawback however is with XML's inability to display data. The application processing the XML will need to be coded/written by developers to specify how this information will be displayed.

For EITI purposes, using XML as a reporting language has the advantage that it is a simple system to use, allowing freedom in defining and using tags as deemed appropriate by the stakeholders, and requiring minimum capacity at the reporting stage. XML is also widely used, allowing for a multitude of data exchanges and content management systems to directly use EITI information.

As a first step in increasing technical accessibility, XML would be well suited as it allows for simple, structured conversion. A sample of indicators, which have well established data standards, such as those listed under EITI Requirement 3.4 (Contribution of extractives industries to economy) and 3.5 (Production data), could be used for an initial 'test' to see how different implementers deal with coding challenges.

The drawback of using XML as the reporting language for EITI is that it would require a coding/development process to take place at the output stage of the EITI process. This would require the EITI secretariat and country offices to have capacity within their web management teams to convert submitted EITI reports and display them on their respective websites.

In the long run, there are limitations of how these documents can evolve over time, where more complex information would be coded and displayed. As stated XML is good for describing data, but is limited in allowing for more complex relationships within the document to be displayed.

XBRL - Extensible Business Reporting Language

XBRL is an XML-based vocabulary for electronic transmission of business and financial data, which builds further on the qualities and capabilities of XML reporting languages.

XBRL is freely available, used by a multitude of institutions and is used by a large number of platforms. It is considered effective reporting language as it list used by a large range of users.

The advantage of using XBRL over XML, is that it allows for multiple relationships to be tagged. For example in XML an entry can be tagged as <tax> and <royalty> only, and it cannot be made clear that the latter is a sub-heading of the former. XBRL allows for such relationships to be specified.

Furthermore, XBRL is the language of choice for financial reporting for corporations across the world, including extractive companies. Therefore the terminology required for tagging in the extractive sector would largely already exist.

XBRL tagging allows for business terminology, their meaning, data types, relationship amongst terms, and rules/formulas to be followed. Thus more complex information can be stored in an XBRL document than an XML document.

XBRL also allows for 'block tagging' where a narrative can be tagged as a whole and therefore easier to label. For data points 'detail tagging' as an option is available. This also allows for more simple tagging in the first instance, where an entire table can be tagged as 'resource flows' and eventually more complex tagging, where each data point within that table can be tagged as 'company reported', or 'royalty revenue' as appropriate.

XBRL can be easily read by simple programs, such as Microsoft Office as well as being picked up by data repositories and exchange systems. Its wide use allows this language to be converted into other formats if required.

The drawbacks associated with XBRL are related to cost and capacity. While the language itself is freely available, the capacity and expense to code a document into XBRL can be the constraint. EITI Independent Administrators can choose to outsource the task of generating a XBRL document to a service provider, but this can be expensive. The service provider will design the appropriate tags in this case. Each report would need to be outsourced and differing tagging versions could result. Alternatively, one company could be assigned to convert all submitted EITI Country Reports, but being dependent on one/two vendors is not recommended.

TABLE 20 OPTIONS FOR XBRL SOURCING

	Outsourced	Bolt on	Integrated
XBRL tagging	✓	✓	✓
Support for the latest taxonomies	✓	✓	✓
XBRL validation	✓	✓	✓
Report handoffs kept solely in-house	✗	✓	✓
XBRL accounting expertise kept in-house	✗	✓	✓
One time tagging	✗	✗	✓
Source data integration	✗	✗	✓
Use prior tagged report as template	✗	✗	✓
Workflow management	✗	✗	✓
Multiple output formats	✗	✗	✓
Auto consistency across all output formats	✗	✗	✓
Collaboration in XBRL tagging	✗	✗	✓
Detail tagging in narrative	✗	✗	✓
Automated taxonomy extensions	✗	✗	✓
Collaboration in taxonomy extension	✗	✗	✓
Taxonomy version management	✗	✗	✓
Taxonomy custom view	✗	✗	✓
Generate SEC-ready files	✗	✗	✓
Rounding	✗	✗	✓
Internal controls	✗	✗	✓
Audit trail	✗	✗	✓

Source: SEC XBRL Mandate for Dummies (2012)*

• www.bcs.bm/documents/SECXBRLMandateforDummies.pdf

The second option is to use 'bolt on' tools within the Independent Administrator own systems, but this requires in-house capacity in knowing how to code and tag using XBRL. For example, a bolt on tool would need to be designed that converts the normal headings in an EITI report to XBRL codes. An EITI report would be produced in the usual way, and then the tool would be run, which would convert the report into an XBRL document. The advantage here, from an EITI context, would be the cost of developing the bolt on tool could be centralized, by the Secretariat choosing to develop this tool and freely dispersing it to all implementers. This would ensure there is consistency in tagging and submissions by different independent administrators. The limitation would be that every time an issue was found, amendments to the tool would be need to made and re-disseminated.

The third option is to use an integrated solution where the report would be constructed with the tagging already in place, i.e. the tags would be used while the report is being written. While this allows for flexibility within the report writing process (with regards to tagging) its success would depend on the capacity of the reporting entity. Differences in reporting quality would emerge between countries with higher and lower capacities immediately. Table 20 provides an overview of the advantages and disadvantages of each XBRL construction discussed above.

JSON - Java Script Object Notation

This flows from the Java Script formatting language and like XML is both human and machine readable. It allows for the storing of information in an organized and easy to read manner. JSON documents are more compact, but has less space for tagging compared with XML. While JSON has the advantage of being uploaded quickly by programs using JavaScript (for web applications), it is more limited for transferring data between systems and storing data, compared to XML and XBRL. Therefore it is not recommended for the EITI.

XML is the simplest of languages to use, where low capacity countries would be able to quickly develop the capacity to code reports in this language. However its ability to evolve is limited and therefore it is secondary to XBRL. The research team would recommend further exploration and development of XBRL as the data language format for consideration.

STEP 2: DATA EXCHANGE

A data exchange allows for incoming (machine readable) information to be stored and reproduced as outgoing information. The following characteristics need to be considered in evaluating a data exchange:

- How is the data exchange triggered? This can be manually, scheduled or by user action
- What data format can be used, that would allow both incoming and outgoing programs to understand how data has been formatted/structured in the document?
- What is the data transfer mechanism, where one source of information may be offline while the other is online?

In general, a XML document is well suited as a data exchange language, as it is considered to be 'self-describing'. i.e. the information about the data (names, field codes etc.) are already included in the document and can therefore be read by the receiving system and can be stored as such. As XBRLs are based on the XML format, these would carry the same advantages.

API's can also use XML language. An API allows third parties to develop their own functions, based on the information provided in the data exchange.

A more simplistic option than XML is comma separated values (CSV) that can be used as a machine readable language. CSVs are quite common and useful in storing information and for downloading data. However, the ability of CSV to cover the variety of data in an EITI report is limited, and is not therefore recommended.

For the EITI process, a well-defined and tagged XML or XBRL document will be accessible to a majority of data exchanges. These files, as they tend to be self-defined, can be effectively used by third parties to store data. Coding for outgoing information from these files can also be easily established. The data exchange by third parties here refers to other stakeholders that may want use and make available EITI information on their own platforms (such as the NRGI and Open Contract). These may range from other initiatives to governments.

Given the vast number of users, with differing platforms, XML/XBRL coding is recommended for ease of use.

STEP 3: CONTENT MANAGEMENT SYSTEMS

Content management systems (CMS) are computer management applications that allow for publishing, editing and modifying content, organizing deleting as well as maintenance from a central interface. From an EITI perspective, CMS that are supportive of open data and content are a priority. The major considerations for a content management system are as follows:

- Is it affordable and manageable?
- Is the system sustainable in the long run?
- Is the system compatible with a wide range of data exchange formats?
- How much space does the system require to store the data?
- Does the system have the appropriate tools to extract relevant information from the stored data repository?
- Does the platform support open sourcing?

CKAN is available as an open source, free, data platform with support from a professional development team at the Open Knowledge Forum. However, CKAN is built using Python as the inputting language, with JavaScript at the front end. Coding therefore would be required for an XML/XBRL document, coming from a data exchange, to be aligned with Python. This would require the services of a professional programmer.

The CKAN platform is being used by International Aid Transparency Initiative (IATI) and the Open Data portal of the UK Government. The major drawback of CKAN is that without developing the tools to access the data, the repository contains, sifting through raw data can be difficult. For example IATI data can be downloaded from the platform in raw format, and would require the user to find the appropriate tools to make use of this data. IATI is in the process of constructing appropriate tools to address this issue. If adopted by EITI as the platform of choice, it would be recommended that the tools for accessing the stored information be constructed at the earliest possible opportunity.

Socrata open data portal offers a host of open data solutions for governments. The data platform is not available for free and a fee must be negotiated with the company. However, the tools developed by the platform are more developed and offer a better interrogation of the data repositories. Socrata also appears to focus more on government data than industrial data which could be considered beneficial as data exchange mechanisms are more likely to be highly developed.

There are other commercial initiatives similar to Socrata available. While these require a payment, this does carry the advantage of having better tools built into the system. The payment is not due from the ultimate users of the web interface but from the client (in this case either the World Bank or EITI).

DEALING WITH SPATIAL DATA

This section provides data access (language format etc.) dealing specifically with spatial data for licenses.

The data access discussion here is based on how spatial data can be provided by EITI implementers such that it can be picked up for display and visualization. These do not reflect data output recommendations for EITI Requirements for license allocation and register

information.

Spatial data is provided in file formats which are specifically designed to carry spatial information and require particular programs to access these files (such as Microsoft Office Word is required to open a .doc file). As opposed to qualitative and quantitative data discussed in the previous section, apart from a JPEG image, spatial data formats are never in human readable formats and always in machine readable formats.

Additionally, unlike qualitative and quantitative data access file formats discussed in the previous section, for spatial data there are very few additional steps to be undertaken between generating the file in the recommended format and how it is transferred and stored. The data reporting language and format will tend to remain the same as the spatial information is compiled, transmitted, stored and displayed.

Machine readable data format

The internationally accepted and common file format, mainly used by government mapping agencies, is the **GIS file format**, which has standardized geographical information encoding.

GIS offers a logical structure to store information and is easily transformed/exchange into other formats, depending on whether it has been constructed under a proprietary, transfer or open format.

GIS format files can be opened by GIS Software, which are designed to capture, store, manipulate, analyse, manage, and present all types of spatial or geographical data.

Formats currently used by one or more government departments to make license information available are listed below. These refer to the data package providing spatial information; carrying geographic and location details, layer files, headers etc.

Vector spatial data file formats

The following file formats can be read by various GIS software and are variations of GIS file formats. They should be supplied as compressed zipped files. Each compressed file contains further information that can be used for display of information. The greater the information in the associated files, the greater the detail can be provided in the visualization.

ESRI[37] ArcView Shape File – an industry standard open specification format which can be used with various GIS software; consist of at least the first three files and additionally the other two layers:

- .shp = shapefile
- .shx = header
- .dbf = associated database file
- .prj = projection file
- .lyr = layer file (controls specifications for display styles).

MapInfo TAB File – MapInfo native tables consist of these files:

- .tab = table structure in ASCII format (required)
- .dat = table data storage in binary format; like dBase iV format, (required),
- .map = map objects stored in binary format (optional),
- .id = links to the .map file (required if the .map file exists)
- .ind = data of indexed fields in binary format (optional).

Microstation DGN File – well documented and standardized; contain detailed display information;

In addition the following two file formats were considered and were dismissed as not providing the required access standard for EITI:

- **AutoCAD Drawing Files (DWG)** – lack of standard for linking attributes can cause problems when transferring data between systems.
- **Autodesk data Interchange Format (DXF)** – readable by many different graphics programs and has very complete display information, but there are no attribute standards so attribute information may not import correctly with some programs.

In our review, ArcView Shape Files were found to be the most commonly used format, for transferring information between different systems. Based on common usage, it is therefore the recommended file format for spatial data.

Data storage

ESRI File Geodatabase is a geographic information model and can store a family of ArcGIS formats. The model;

- Provides a better way to manage and constrain the data than Shape Files but need ESRI GIS applications to read these (non-ERSI applications not able to read the encrypted folder).
- Can be implemented for a single-user via MS Access or multi-users.

The GeoDatabase uses ArcSDE (Spatial Database Engine) which enables using Relational Database Management Systems for spatial data and can interact with PostgreSQL, SQL Server, Oracle, DB2, Informix etc.

[37] Environmental Systems Research Institute, 1998

Other file formats

Apart from the file formats mentioned above, the following formats can be used for transferring information. They allow the user to display the information in their chosen GIS or online platform (but maybe not allow saving and modifying the data in GIS format). The usefulness of these formats may depend on the capacity of the user's internet service. These file formats are considered acceptable for reporting spatial data but are not encouraged or recommended.

Google Earth KML (Keyhole Markup Language) File – a file format based on XML language to display in online portals such as Google Earth, Google Maps; international standard maintained by the Open Geospatial Consortium, Inc.[38]

Google Earth KMZ File – a main KML file zero or more supporting files packaged using a Zip utility (archive)[39]; recommended to create a KMZ if KML file larger than 10k bytes or if it references other files.

WFS (Web Feature Service) – OGC specification; allows a client to retrieve geospatial data encoded in GML via the internet; generally a complete dataset is pulled at once using WFS, so it can be very slow for accessing a large dataset.

WMS (Web Map Service) – an OGC standard protocol for serving georeferenced map images over the internet; geographic information that has been rendered as an image.

WCS (Web Coverage Service) - a hybrid of WFS and WMS.

GML (Geography Markup Language) – XML for geographical features, as defined by OGC.

GeoJSON - used by many open source GIS packages; based on JSON (JavaScript Object Notation).

For spatial data file formats, it would be considered good to provide these as GIS file formats. Given that there are a number of operating systems that can use these formats, there are no clear better or best recommendations in this category. However, within the GIS file format, the greater the number of layers provided, the better it would be considered.

CASE STUDY - REVENUE DEVELOPMENT FOUNDATION

In context of data access options, the RDF model offers some interesting considerations. The technical focus of the project is to manage both incoming and outgoing data on revenues and income. The scope of the initiative is much larger than just the extractive sector, while the list of countries covered is still small; Liberia, Ghana, Mali and Sierra Leone. Malawi is the only country that the initiative covers that does not overlap with the EITI.

The system works on three principles. First, the focus is to have revenue (and other) data generated by the system itself and not collected at a later date (as would happen with EITI reconciliation). For example when a license application is granted, the aim is to input the information into the system itself. Second, information is updated on a regular basis, allowing for up-to-date information to be available on a weekly basis. The system is cloud based and information from servers in different countries is uploaded weekly to the central repository. Third, the visualization allows for a number of different data streams to be interlinked, i.e. one entity can be tracked over a range of indicators such as license details and tax revenue.

RDF uses the Mining Cadastre Administration System (MCAS), which is a web-based software, available free of cost. MCAS uses XML, and is able to receive information in that format. On spatial data, RDF is using GeoServer servers, which includes ESRI, ArcGIS shape files for data exchange.

RDx, developed by the foundation will become an open source format for transfer of spatial data along with data related to revenues, payments, etc. Initial usage will be for making data available from government portals (Mining Cadastre Administration Systems) which other will be able to use via an API. The exchange currently uses XML, and is shared via a zipped file. The file has two section; definitions of classes (configurable parameters) and the data itself.

RDF suggests that using a data integration system approach would be a useful exercise. An integration system works on the principle that differing data streams, (such as license and revenue) can be condensed within the same system.

Data exchanges rely on the ability of incoming information to be stored and then presented as outgoing information and there are likely to be pre-requisites on what reporting languages can be used. A data integration approach focuses on allowing differing third party systems to use the same data stream.

RDF suggests that recommending one set of systems may be disadvantageous, while evolving to a shared system would be more useful. However, this process of evolution will be a slow process and will take time (in years).

There are three advantages of the RDF systems. First, it

[38] (OGC); KML 2.2
[39] Keyhole Markup Language

manages data at source, therefore the data will tend to be more up-to-date and generated quickly. This is because it avoids the need to wait for templates to be filled out by stakeholders and information to be put-together by different government departments.

Second, the systems allow for different government departments to exchange information. That allows information for a diverse range of categories (tax, production, exports) to be linked for a single entity, such as a mining company.

Third, coupled with geospatial data, the presentation of this information is easy to visualize and is user friendly.

The disadvantages are centred around capacity and cost. A substantial amount of training and effort is required to set up the system in the first place, with RDF specialists embedded with the client for a two-year period. There are a number of systems that require to be installed, in various government departments, to co-ordinate this data.

At this time, RDF is concentrating on government reporting, and is not focusing on company reporting, which is an essential component of EITI. Companies could be required to submit information in XML-based languages so that they are comparable to RDF based systems.

Lastly, the number of countries where RDF is operational is limited at this time. The ease of cross country comparison is not clear, but there is space for tracking historical changes for a single country.

The scope of the RDF systems is much larger than resource revenue data, and it upgrades the capacity of the entire government, rather than one particular sector. This would be very useful in extracting contextual information about the economy and the relevant performance of the extractive sector in relation to other sectors. An uptake by a larger number of countries would allow for data required for EITI standards to be available on similar formats, from a number of countries.

RDF languages, data exchanges and content management systems work well as they are being organized by a single entity for a number of different countries. This allows for consistency across the different countries. The fundamental advantage of the system comes from managing the data input stage. Data is standardized from the very start, and therefore each successive transfer of the data file up the access chain, maintains its integrity.

ANNEX I – COMPARATIVE INITIATIVES

METHODOLOGY

This section outlines the methodology adopted to review the data outputs published by other initiatives relevant to the EITI. Table 21 outlines the indicators and the nature of data outputs publicly available on these initiatives websites. It is important to note that many of these initiatives monitor various other indicators and that Table 21 addresses only the indicators they cover that are relevant to the EITI.

This information was obtained by examining an initiatives website and observing whether they have published data that covers any of the seven key requirements relevant to the EITI. These key requirements are: Fiscal regime (3.2.a), Legal framework (3.2.a+b), Contribution of extractives industries to economy (3.4), Production data (3.5), Register and Allocation of licenses (3.9 + 3.10), Contracts (3.12) and Revenue streams (4.1).

These indicators were then categorized based on the nature of the data outputs into:

- narrative (QL),
- quantitative (QT)
- indexed (A) data.

Narrative data is defined as text, predominately in the form of annual reports, contracts and factsheets. Quantitative data is data points, either numeric (production volumes) or text (categorical survey data), often in the form of downloadable datasets or interactive visualizations.

Indexed data is where an initiative has analysed multiple data points to create a measurement relevant to the chosen indicator. These indexes are often presented in the form of an interactive visualization and may also include a downloadable dataset. If an initiative has published multiple data types relevant to a particular indicator, all are listed and the predominant type is listed in **bold font**.

There are three initiatives (Dodd-Frank 1504, EU Accounting Directive and Resources Projects) listed in Table 21 which have indicated the types of data they will cover but have not yet begun publishing this data. For these initiatives, the types of data they will cover have been noted in Table 21 and the reason for not publishing yet is also detailed. In instances where an initiative has no relevant data to the EITI's key indicators, the reason has also been noted in Table 21.

Three further variables have been added to Table 21 to add greater detail to the nature of data outputs being produced by these initiatives. The first of these variables indicates the spread of data being covered by these initiatives, outlining the number of countries covered by the data and, in instance of governmental initiatives, what entities the disclosure requirements apply to. The second variable details how interactive the data is, including whether any visualizations are available on the website. The final variable highlights how frequently these initiatives update the data on their website in relation to the key indicators relevant to the EITI.

TABLE 21 DATA COVERED BY INITIATIVES RELEVANT TO THE EITI

	3.2.a	3.2.a+b	3.4	3.5	3.9 + 3.10	3.12	4.1	Spread of data
A Good Deal Better – Global Witness	**QL**	**QT, QL**	**QT**	**QL**	**QL, QT**	**QL, QT**	**QL, QT**	Country specific; Uganda
Dodd-Frank 1504 (No data currently released, these are the expected data types)	QL	QL				QL	QL, QT	Disclosure requirements will apply to all US and foreign private issuers (including those that are government owned) that operate in the extractive industries
EI Source Book								
EU Accounting Directive (No data currently released, these are the expected data types)	QL	QL				QL	QL, QT	The disclosure requirement will apply to large undertakings and public interest entities
Global Reporting Initiative								
Guinee Contracts Miniers	QL	QL				QL		Country specific; Guinea
Index of Economic Freedom								The index covers the world with only a few countries not having any data, e.g South Sudan
Kimberly Process	QL	QL	QT	QT, QL			QL	Data from 81 countries (participants in the Kimberly Process)
Resource Governance Index	A, QT, QL	A, QT, QL	QT	QT	QT	QT	QT	Data from 58 countries (most of the biggest countries in the extractive industries)
Open Budget Survey		A, QT						Data from 100 countries
Open Budget Survey Tracker		A, QT						Data from 100 countries
Open Contracting								
Open Government Partnership		QL						Data from 65 countries (participants in the Open Government Partnership)
Open Oil		QL	QT	QT	QT	QT	QT	Data from 72 countries, with a detailed case study of Nigeria
Publish What You Pay	QL	QL			QL	QL, QT	QL, QT	Data from 35 countries
Resource Contracts	QL	QL				QL		Data from 58 countries (most of the biggest countries in the extractive industries)
Resource Projects (No data currently released, these are the expected data types)		QL		QT			QL	Data from 58 countries (most of the biggest countries in the extractive industries)
Revenue Development Foundation								
Sierra Leone								
Transparency Initiative	QL	QL						Data from 7 countries for the extractive industries
Transparency International		A				QT		Global coverage
UN Global Compact								
World Justice Project – Rule of Law Index		A						Data from 102 countries

ANNEX I – COMPARATIVE INITIATIVES

continued

Presentation/ Visualization of data	How frequently they are updated	Reason for no data
Interactive visualizations	One-off report - produced in 2014	
Interactive data	Disclosures must be provided in an interactive data format with an annual report, the Commission must then make a compilation of the information available online	Implementation of Section 1504 has been delayed by a federal lawsuit filed by a coalition of industry organizations claiming that the SEC has overstepped its congressional mandate. Currently Section 1504 has yet to be implemented and at the end of 2014 Oxfam America sued the SEC for failing to issue new transparency requirements.
		List of other transparency related sources - appears to not have any relevant published raw data of its own
Reporting will depend on implementation by each Member State	Disclosures will be required on an annual basis - how these disclosures will be published will depend on implementation by each Member State	The Directive has now been agreed and member states are in the process of deciding their implementation processes. The UK was the first to develop its implementation plan and the first disclosures will relate to financial years commencing on, or after, 1 January 2015.
		Produces a database of sustainability reports - no relevant raw data
All data presented in contracts published as images, as a result, content is not searchable	83 reports and contracts have been published dating from 1958 to present	
Interactive visualizations	Published annually by The Heritage Foundation	
Data is presented with the annual report, content is searchable	An annual report is published on the Kimberly Process website by each participating country	
Interactive visualizations, country profiles and downloadable dataset	Annual report and accompanying data published on the Natural Resource Governance Institute website	
Interactive visualizations, country profiles and downloadable dataset	Biennial reports published on the International Budget Partnership website from 2006 to 2012. The 2014 report has yet to be realized but an update to the data has been published.	
Interactive visualizations, country profiles and downloadable dataset	The data is updated monthly	
		List of government contract repositories - no relevant raw data
Downloadable open data	Biannual independent progress reports published on the Open Government Partnership website	
Interactive visualizations and downloadable dataset	The contract repository is updated annually. The Nigeria case study is their first country case study and is still ongoing	
All data presented in reports and factsheets	One off reports realized based on research agenda	
All data presented in reports and contracts	Multiple reports and contracts that have been disclosed by participating countries between 1958 to present have been published on the Resource Contracts website	
All data presented in project reports	Multiple project reports disclosed by participating countries from 1958 to present will be published on the Resource Projects website	Resource Projects is currently under development and is scheduled to be launched later in 2015
		Has a management tool for governments - does not publish raw data itself
		Website does not currently work
All data presented in reports and factsheets	One off reports realized based on research agenda	
Interactive visualizations, country profiles and downloadable dataset	The data and analysis are published annually on the Transparency International website	
		List of companies that are part of the initiative, no relevant raw data
Interactive visualizations, country profiles and downloadable dataset	Annual report and accompanying data published on the World Justice Report website	

TABLE 22 COUNTRY COMPARISON OF FLEXICADASTRE DATA

	Mineral license commodity category (indicated by colour and a description)	Code	Type	Holder name
Botswana	Precious stones; energy; industrial; petroleum	✗	✗	✗
DRC	13 polygon types including applications, reserved zones and restricted areas	✗	✗	✗
Kenya	Exclusive and special prospecting leases; mining le ases; location leases	✗	X	X
Namibia	6 types of active licenses; applications	✗	✗	✗
Mozambique	Several license types, reserved areas, hydrocarbons, conservation areas	✗	✗	✗
Papua New Guinea	Several active license types, applications, reserved areas, protected areas	✗	✗	✗
Rwanda	Mining licenses; quarry licenses; prospecting licenses, exploration licenses	✗	✗	✗
South Sudan	Large and small scale mining licenses, reconnaissance licenses, exploration licenses; applications	✗	✗	✗
Uganda	4 active license types; applications	✗	✗	✗
Tanzania	6 active license types; applications	✗	✗	✗

ANNEX II – MINING CADASTRE PORTALS

Date applied (DD/MM/YYYY	Date granted (DD/MM/YYYY)	Date expires (DD/MM/YYYY)	Commodities	Area measure	District name	Active licenses and applications are in 2 separate layers	Other information layers able to be displayed
		✗	✗	Square km	✗		1. Administration 2. Farms 3. Satellite Imagery
✗	✗	✗	✗	Square km			
X	X	X	✗	Square km		✗	1. Administration 2. Geology 3. Mineral occurrences
✗	✗	✗	✗	Ha		✗	1. Hydrocarbon Licenses 2. Administration 3. Farms 4. Geology 5. Mineral Occurrences 6. Satellite Imagery
✗	✗	✗	✗	Ha			
✗	✗	✗		Number of sub blocks			
✗	✗	✗	✗	Ha		✗	1. Administration 2. Mine Sites
✗	✗	✗	✗	Cadastral units		✗	1. Oil Concessions 2. Administration 3. Geology 4. Satellite Imagery
✗	✗	✗	✗	Square km		✗	1. Administration (protected Areas) 2. Satellite Imagery
✗	✗	✗	✗	Square km		✗	1. Administration 2. Geophysics 3. Geology 4. ASM Centres 5. Mineral Occurrences 6. Mines 7.Satellite Imagery

ANNEX III – PRODUCTION DATA

Commodity	Production Data (Grade)	*Volume/ Quantity*	Price Data	*Source*	*Source for Price Data*	Conversion for Concentrate to refined	Export Value - Trade Code Trade Code Equivalent (SITC Rev 3)	Description
Alloying Metals								
Antimony	%	tonnes	$/tonne	US$/tonne	USGS	1.00	68993	Antimony/articles/waste
Ferrotitanium	%	tonnes	$/tonne				(HS 2002) - 720291	Ferrotitanium and ferrosilicotitanium
Ferrotungsten	%	tonnes	$/tonne	Ferro-tungsten, basis 75% W, Rotterdam, duty unpaid, in warehouse ($/kg)	UNCTAD - Stat		(HS 2002) - 720280	Ferrotungsten and ferrosilicotungsten
Ferrovanadium	%	tonnes	$/tonne				720292	Ferrovanadium
Tantalum	ppm	tonnes	$/tonne	US$/lb	USGS	1.00	68913	Tantalum unwrought/waste
Titanium	%	tonnes	$/tonne	US$/tonne	USGS fob Australia	1.00	28783	Titanium ore/concentrate
Titanium Sponge	N/A	tonnes	$/tonne				68983	Titanium unwrought/waste
Tungsten	%	tonnes	$/tonne	Tungsten ore, minimum content of Wo3 65%, CIF Europe ($/mtu Wo3)	UNCTAD - Stat	0.6	28792	Tungsten ore/concentrate
Vanadium	%	tonnes	$/tonne	US$/lb	USGS	0.83	68997	Bvanadium/articles/waste
Base Metals								
Cobalt	%	tonnes	$/tonne	US$/lb	USGS	0.33	28793	Cobalt ore/concentrate
Copper	%	tonnes	$/tonne	Copper, grade A cathode, LME spot price, CIF European ports	IMF	0.77	283	Copper ores/concentrates
Ferromolybdenum	%	tonnes	$/tonne				(HS 2002) - 720270	Ferromolybdenum
Ferronickel	%	tonnes	$/tonne				(HS 2002) - 720260	Ferronickel
Lead	%	tonnes	$/tonne	Lead, 99.97% pure, LME spot price, CIF European Ports	IMF	0.77	2874	Lead ores/concentrates
Molybdenum	%	tonnes	$/tonne	US$/kg	USGS	1.00	28781	Molybdenum ore, roasted
Nickel	%	tonnes	$/tonne	Nickel, melting grade, LME spot price, CIF European ports	IMF	0.7	284	Nickel ores/concs/etc.
Nickel Pig Iron	%	tonnes	$/tonne					
Tin	%	tonnes	$/tonne	Tin, standard grade, LME spot price, US$ per metric ton	IMF	1.00	2876	Tin ores/concentrates
Zinc	%	tonnes	$/tonne	Zinc, high grade 98% pure, US$ per metric ton	IMF	0.63	2875	Zinc ores/concentrates
Zinc-Lead	%	tonnes	$/tonne					
Bauxite-Aluminium								
Alumina	%	tonnes	$/tonne				2852	Alumina(aluminium oxide)
Aluminium	%	tonnes	$/tonne	Aluminium, 99.5% minimum purity, LME spot price, CIF UK ports, US$ per metric ton	IMF		285	Aluminium ores/concs/etc.
Bauxite	%	tonnes	$/tonne	US$/tonne	USGS	1.00	(SITC Rev 1) -2833	Bauxite and concentrates of aluminium

ANNEX III – PRODUCTION DATA

continued

Commodity	Production Data (Grade)	*Volume/ Quantity*	Price Data	*Source*	*Source for Price Data*	Conversion for Concentrate to refined	Export Value - Trade Code Trade Code Equivalent (SITC Rev 3)	Description
Bulk Commodities								
Aggregates	N/A	tonnes	$/tonne				(SITC Rev 4) - 2734	Pebbles, gravel, broken/ crushed stone, of a kind commonly used for concrete aggregates, for road metalling/for railway/other ballast, shingle and flint, whether/not heat-treated; macadam of slag, dross/ similar industrial waste, whether or not incorporated
Coke	%	tonnes	$/tonne				325	Coke/semi-coke/retort
Ferromanganese	%	tonnes	$/tonne				(SITC Rev 4) -67141	Ferromanganese containing by weight > 2% of carbon
Hematite	%	tonnes	$/tonne					
Iron	%	tonnes	$/tonne				676	Iron/steel bars/rods/etc
Iron Ore	%	tonnes	$/tonne	China import iron ore fines 62% FE spot (CFR Tianjin port)	IMF	1.00	281	Iron ore/concentrates
Magnetite	%	tonnes	$/tonne				6714	Ferro-manganese
Manganese	%	tonnes	$/tonne	US$/tonne	Metal Bulletin	1.00	2877	Manganese ore/conc.
Manganese Ore	%	tonnes	$/tonne	Manganese 99.7% electrolytic manganese flake, free market, in warehouse	UNCTAD - Stat		2877	Manganese ore/conc.
Metallurgical/Coking Coal	N/A	tonnes	$/tonne					
Quarried products	N/A	tonnes	$/tonne				2731	Gravel/crushed stone/etc.
Sandstone	N/A	tonnes	$/tonne				27313	Granite/sandstone/etc
Silicomanganese	%	tonnes	$/tonne				(HS 2002) - 720230	Ferrosilicomanganese
Steel	N/A	tonnes	$/tonne				675	Flat rolled alloy steel
Bulk/Energy								
Bituminous coal	N/A	tonnes	$/tonne				270112	Bituminous coal
brown coal	N/A	tonnes	$/tonne					
Coal	N/A	tonnes	$/tonne	Australian thermal coal, 12,000- btu/pound, less than 1% sulfur, 14% ash, FOB Newcastle/Port Kembla	IMF		32	Coal/coke/briquettes
coked coal	N/A	tonnes	$/tonne				325	Coke/semicoke/retort
concentrated coking coal	N/A	tonnes	$/tonne				325	Coke/semicoke/retort
Fossil coal	N/A	tonnes	$/tonne				32	Coal/coke/briquettes
semi-coked coal	N/A	tonnes	$/tonne				325	Coke/semicoke/retort

ANNEX III – PRODUCTION DATA

continued

Commodity	Production Data (Grade)	*Volume/ Quantity*	Price Data	*Source*	*Source for Price Data*	Conversion for Concentrate to refined	Export Value - Trade Code Trade Code Equivalent (SITC Rev 3)	Description
Chromite Group								
Chromite	%	tonnes	$/tonne	US$/tonne	USGS		681591	Containing magnesite, dolomite or chromite
Ferrochrome	%	tonnes	$/tonne					
Energy								
Thermal Coal	N/A	tonnes	$/tonne				32	Coal/coke/briquettes
Uranium (U3O8)	%	lbs.	$/lb	Uranium, NUEXCO, Restricted Price, Nuexco exchange spot	IMF		286	Uranium/thorium ore/conc
Fertilizers								
Ammonium Sulfate	%	tonnes	$/tonne					
Phosphate	%	tonnes	$/tonne	Phosphate rock, Khouribga, 70% BPL, contract, FAS Casablanca	UNCTAD - Stat	1.00	2723	Natural phosphates
Potash	%	tonnes	$/tonne	US$/tonne	USGS	1.00		
Potassium Chloride	%	tonnes	$/tonne				56231	Potassium chloride fert.
Potassium Nitrate	%	tonnes	$/tonne				52352	Potassium nitrate
Potassium Oxide	%	tonnes	$/tonne					
Potassium Sulfate	%	tonnes	$/tonne					
Gemstones								
Amethyst	ct/tonne	ct	$/ct				667	Pearls/precious stones
Beryl	ct/tonne	ct	$/ct					
Chrysoprase	ct/tonne	ct	$/ct					
Corundum	ct/tonne	ct	$/ct					
Diamonds	ct/tonne	ct	$/ct	US$/ct	Kimberley Process	1.00	6672	Diamonds unset
Emerald	ct/tonne	ct	$/ct				667	Pearls/precious stones
Garnet	%	tonnes	$/tonne				667	Pearls/precious stones
Jade	%	tonnes	$/tonne				667	Pearls/precious stones
Opal	ct/tonne	ct	$/ct				667	Pearls/precious stones
Ruby	ct/tonne	ct	$/ct				667	Pearls/precious stones
Sapphire	ct/tonne	ct	$/ct				667	Pearls/precious stones
Tanzanite	ct/tonne	ct	$/ct				667	Pearls/precious stones
Topaz	ct/tonne	ct	$/ct				667	Pearls/precious stones
Heavy Mineral Sands								
Heavy Mineral Sands	%	tonnes	$/tonne				2733	Sands, natural
Ilmenite	%	tonnes	$/tonne				2733	Sands, natural
Iron Sand	%	tonnes	$/tonne				2733	Sands, natural
Leucoxene	%	tonnes	$/tonne				2733	Sands, natural
Rutile	%	tonnes	$/tonne				2733	Sands, natural

ANNEX III – PRODUCTION DATA

continued

Commodity	Production Data (Grade)	*Volume/ Quantity*	Price Data	*Source*	*Source for Price Data*	Conversion for Concentrate to refined	Export Value - Trade Code Trade Code Equivalent (SITC Rev 3)	Description
Zircon	%	tonnes	$/tonne				2733	Sands, natural
Zirconium	%	tonnes	$/tonne	US$/tonne	USGS	1.00	28784	Zirconium ore/concentrate
Precious Metals								
3PGM+Au	g/tonne	troy oz	$/oz.					
6PGM+Au	g/tonne	troy oz	$/oz.					
Gold	g/tonne	troy oz	$/oz.	Gold, 99.5% fine, afternoon fixing London	UNCTAD - Stat	1.00	96	Coin nongold non-current
Iridium	g/tonne	troy oz	$/oz.					
Osmium	g/tonne	troy oz	$/oz.					
Palladium	g/tonne	troy oz	$/oz.			1.00	6812	Platinum etc
Platinum	g/tonne	troy oz	$/ troy oz			1.00	6812	Platinum etc
Platinum Group Metals	g/tonne	troy oz	$/ troy oz				6812	Platinum etc
Rhenium	g/tonne	troy oz	$/ troy oz	US$/kg	Metal Bulletin			
Rhodium	g/tonne	troy oz	$/ troy oz			1.00		
Ruthenium	g/tonne	troy oz	$/ troy oz					
Silver	g/tonne	troy oz	c/ troy oz	Silver, 99.9%, Handy & Harman, New York	UNCTAD - Stat	1.00	28911	Silver ore/concentrates
Rare Earth Elements								
Cerium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52595	Rare earth isotop/cmpds
Dysprosium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52596	Rare earth isotop/cmpds
Erbium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52597	Rare earth isotop/cmpds
Europium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52598	Rare earth isotop/cmpds
Ferroniobium	%	tonnes	$/tonne	US$/kg	USGS	1.00	52599	Rare earth isotop/cmpds
Gadolinium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52600	Rare earth isotop/cmpds
Heavy Rare Earths and Yttrium	%	tonnes	$/kg	US$/kg	USGS	1.00	52601	Rare earth isotop/cmpds
Holmium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52602	Rare earth isotop/cmpds
Indium	ppm	tonnes	$/tonne	US$/kg	USGS	1.00	52603	Rare earth isotop/cmpds
Lanthanides	%	tonnes	$/kg	US$/kg	USGS	1.00	52604	Rare earth isotop/cmpds
Lanthanum	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52605	Rare earth isotop/cmpds
Light Rare Earths	%	tonnes	$/kg	US$/kg	USGS	1.00	52606	Rare earth isotop/cmpds
Lutetium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52607	Rare earth isotop/cmpds
Neodymium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52608	Rare earth isotop/cmpds
Niobium	%	tonnes	$/tonne	US$/kg	USGS	1.00	52609	Rare earth isotop/cmpds
Praseodymium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52610	Rare earth isotop/cmpds
Promethium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52611	Rare earth isotop/cmpds
Rare Earth Elements	%	tonnes	$/kg	US$/kg	USGS	1.00	52612	Rare earth isotop/cmpds
Samarium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52613	Rare earth isotop/cmpds
Scandium	ppm	tonnes	$/tonne	US$/kg	USGS	1.00	52614	Rare earth isotop/cmpds

ANNEX III – PRODUCTION DATA

continued

Commodity	Production Data (Grade)	*Volume/ Quantity*	Price Data	*Source*	*Source for Price Data*	Conversion for Concentrate to refined	Export Value - Trade Code Trade Code Equivalent (SITC Rev 3)	Description
Terbium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52615	Rare earth isotop/cmpds
Thulium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52616	Rare earth isotop/cmpds
Ytterbium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52617	Rare earth isotop/cmpds
Yttrium	ppm	tonnes	$/kg	US$/kg	USGS	1.00	52618	Rare earth isotop/cmpds
Specialty/Industrial								
Wollastonite	%	tonnes	$/tonne					
Aluminous Clay	%	tonnes	$/tonne					
Arsenic	%	tonnes	$/tonne	US$/lb	Metal Bulletin		(HS 2002) - 280480	Arsenic
Asbestos	%	tonnes	$/tonne	US$/tonne	USGS	1.00	2784	Asbestos
Attapulgite	%	tonnes	$/tonne					
Barite	%	tonnes	$/tonne			1.00		
Bentonite	%	tonnes	$/tonne	US$/tonne	USGS	1.00	27827	Bentonite
Beryllium	%	tonnes	$/tonne				68991	Beryllium unwrght/waste
Bismuth	%	tonnes	$/tonne	US$/lb	Metal Bulletin		68992	Bismuth/articles/wast
Borates	%	tonnes	$/tonne				27894	Crude natural borates
Boron	%	tonnes	$/tonne	US$/tonne	USGS	1.00	(HS 2002) - 2810	Oxides of boron; boric acids.
Cadmium	%	tonnes	$/tonne	c/lb	Metal Bulletin		68982	Cadmium unwrought/waste
Caesium	%	tonnes	$/tonne					
Calcium Carbonate	%	tonnes	$/tonne				(HS 2002) - 283650	Calcium carbonate
Calcrete	%	tonnes	$/tonne					
Chromium	%	tonnes	$/tonne	US$/tonne	Metal Bulletin	1.00	28791	Chromium ore/concentrate
Clay	%	tonnes	$/tonne				662	Clay/refractory material
Diatomite	%	tonnes	$/tonne					
Dolomite	%	tonnes	$/tonne				27823	Dolomite
Felspar	%	tonnes	$/tonne	US$/tonne	USGS	1.00	27853	Felspar/leucite/syenite
Ferrosilicon	%	tonnes	$/tonne					
Fluorite (fluorspar)	%	tonnes	$/tonne	US$/tonne	USGS	1.00		
Fluorspar	%	tonnes	$/tonne	US$/tonne	USGS	1.00	27854	Fluorspar
Frac Sand	%	tonnes	$/tonne					
Gallium	%	tonnes	$/tonne	US$/kg	Metal Bulletin			
Germanium	%	tonnes	$/tonne	US$/kg	Metal Bulletin		68996	Germanium/articles/waste
Granite	%	tonnes	$/tonne				27313	Granite/sandstone/etc
Graphite	%	tonnes	$/tonne	US$/tonne	USGS	1.00	27822	Natural graphite
Gypsum	%	tonnes	$/tonne	US$/tonne	USGS	1.00	2732	Gypsum etc for cement mf
Hafnium	%	tonnes	$/tonne					
Iodine	%	tonnes	$/tonne				52225	Fluorine,bromine,iodine
Kaolin	%	tonnes	$/tonne	US$/tonne	USGS	1.00	27826	Kaolinic clays
Lime	%	tonnes	$/tonne				661	Lime/cement/constr matl
Lime Sands	%	tonnes	$/tonne				661	Lime/cement/constr matl

ANNEX III – PRODUCTION DATA

continued

Commodity	Production Data (Grade)	*Volume/ Quantity*	Price Data	*Source*	*Source for Price Data*	Conversion for Concentrate to refined	Export Value - Trade Code Trade Code Equivalent (SITC Rev 3)	Description
Limestone	%	tonnes	$/tonne				27322	Limestone etc. for cement
Lithium	%	tonnes	$/tonne				(HS 2002) - 282520	Lithium oxide and hydroxide
Magnesite	%	tonnes	$/tonne				27824	Magnesite
Magnesium	%	tonnes	$/tonne	US$/tonne	USGS	1.00	68915	Magnesium unwrought
Magnesium Chloride	%	tonnes	$/tonne					
Marble	%	tonnes	$/tonne				27312	Marble/etc slabs
Mercury	%	tonnes	$/tonne	US$/flask	USGS	1.00	52227	Mercury
Mica	%	tonnes	$/tonne	US$/tonne	USGS - Scrap and Flake	1.00	27852	Mica/mica waste
Monazite	%	tonnes	$/tonne					
Perlite	%	tonnes	$/tonne				27898	Vermiculite/perlite/chlo
Pyrite	%	tonnes	$/tonne					
Rubidium	%	tonnes	$/tonne					
Salt	%	tonnes	$/tonne	US$/tonne	USGS	1.00	2724	Ntrl potassium salts
Scheelite	%	tonnes	$/tonne					
Selenium	%	tonnes	$/tonne	US$/lb	Metal Bulletin			
Silica	%	tonnes	$/tonne				27331	Silica/quartz sands
Silica Sand	%	tonnes	$/tonne			1.00	27331	Silica/quartz sands
Sodium Bicarbonate	%	tonnes	$/tonne				52373	Sodium bicarbonate
Sodium Carbonate	%	tonnes	$/tonne	US$/short tons	USGS	1.00	52372	Neutral sodium carbonate
Sodium Sulfate	%	tonnes	$/tonne				52345	Sodium sulphates
Spodumene	%	tonnes	$/tonne					
Strontium	%	tonnes	$/tonne					
Sulfur	%	tonnes	$/tonne	US$/tonne	USGS	1.00	274	Sulphur/unroastd pyrites
Sulfuric Acid	%	tonnes	$/tonne					
Synthetic Rutile	%	tonnes	$/tonne				27853	Felspar/leucite/syenite
Talc	%	tonnes	$/tonne	US$/tonne	USGS	1.00	27893	Talc/natural steatite
Tellurium	%	tonnes	$/tonne	US$/kg	Metal Bulletin			
Thorium	%	tonnes	$/tonne				2862	Thorium ore/concentrates
Vermiculite	%	tonnes	$/tonne				27898	Vermiculite/perlite/chlo
Zeolites	%	tonnes	$/tonne					

ANNEX IV – CONVERSION FACTORS

MINERAL MEASUREMENT CONVERSION		
Magnitude	Magnitude To	Measurement Translation Rate
$/ct	$/kg	5000
$/g	$/kg	1000
$/kg	$/ct	0.0002
$/kg	$/g	0.001
$/kg	$/lakhtonne	100000000
$/kg	$/lb	0.45359237
$/kg	$/longton	1016.046909
$/kg	$/MTU	10
$/kg	$/oz	0.031103477
$/kg	$/ton	907.18474
$/kg	$/tonne	1000
$/lakhtonne	$/kg	0.00000001
$/lakhtonne	$/tonne	0.00001
$/lb	$/kg	2.204622622
$/lb	$/ton	2000
$/lb	$/tonne	2204.622622
$/longton	$/kg	0.000984
$/longton	$/tonne	0.984206528
$/MTU	$/kg	0.1
$/MTU	$/tonne	100
$/oz.	$/kg	32.1507466
$/ton	$/kg	0.0011
$/ton	$/lb	0.0005
$/ton	$/tonne	1.102311311
$/tonne	$/kg	0.001
$/tonne	$/lakhtnne	100000
$/tonne	$/lb	0.000453592
$/tonne	$/longton	1.016046909
$/tonne	$/MTU	0.01
$/tonne	$/ton	0.90718474
%	ppb	10000000
%	ppm	10000
1000lbs	1000oz	14.58333333
1000lbs	ct	2267961.85
1000lbs	kg	453.59237
1000lbs	kilotonnes	0.000453592
1000lbs	tonnes	0.453592
1000oz	1000lbs	0.068571429
1000oz	ct	155517.384
1000oz	kg	31.1034768

MINERAL MEASUREMENT CONVERSION		
Magnitude	Magnitude To	Measurement Translation Rate
1000oz	kilotonnes	0.0000311
1000oz	tonnes	0.031103477
ct	1000lbs	0.000000441
ct	1000oz	0.00000643
ct	g	0.2
ct	kg	0.0002
ct	kilotonnes	0.0000000002
ct	lbs	0.000440925
ct	oz	0.006430149
ct	tonnes	0.0000002
ct/ton	ct/tonne	1.102311311
ct/tonne	ct/ton	0.90718474
g	ct	5
g	kg	0.001
g	lbs	0.002204623
g	oz	0.032150747
g	tonnes	0.000001
g/m³	oz./m³	0.032150747
g/ton	g/tonne	1.102311311
g/tonne	g/ton	0.90718474
g/tonne	oz./ton	0.029166667
g/tonne	oz./tonne	0.032150747
g/tonne	ppb	1000
g/tonne	ppm	1
kg	1000lbs	0.002204623
kg	1000oz	0.032150747
kg	ct	5000
kg	g	1000
kg	kg	1
kg	kilotonnes	0.000001
kg	lakhtonne	0.00000001
kg	lbs	2.204622622
kg	longtons	0.000984207
kg	MTU	0.1
kg	oz	32.1507466
kg	tonnes	0.001
kg	tons	0.001102311
kilotonnes	1000lbs	2204.622622
kilotonnes	1000oz	32150.74657
kilotonnes	ct	5000000000

ANNEX IV – CONVERSION FACTORS

continued

MINERAL MEASUREMENT CONVERSION		
Magnitude	**Magnitude To**	**Measurement Translation Rate**
kilotonnes	kg	1000000
kilotonnes	tonnes	1000
lakhtonne	kg	100000000
lakhtonne	tonnes	100000
lakhtonne	tons	110231
lbs.	ct	2267.96185
lbs.	g	453.59237
lbs.	kg	0.45359237
lbs.	oz.	14.58333333
lbs.	tonnes	0.000453592
lbs.	tons	0.0005
longtons	kg	1016.046909
longtons	tonnes	1.016046909
longtons	tons	1.12
MTU	kg	10
MTU	tonnes	0.01
oz.	ct	155.517384
oz.	g	31.1034768
oz.	kg	0.031103477
oz.	lbs.	0.068571429
oz.	tonnes	0.0000311
oz.	tons	0.0000343
oz./m^3	g/m^3	31.1034768
oz./ton	g/tonne	34.28571429
oz./tonne	g/tonne	31.1034768
ppb	%	0.0000001
ppb	g/tonne	0.001
ppm	%	0.0001
ppm	g/tonne	1
tonnes	1000lbs.	2.204622622
tonnes	1000oz	32.15074657
tonnes	ct	5000000
tonnes	g	1000000
tonnes	kg	1000
tonnes	kilotonnes	0.001
tonnes	lakhtonne	0.00001
tonnes	lbs.	2204.622622
tonnes	longtons	0.984206528

MINERAL MEASUREMENT CONVERSION		
Magnitude	**Magnitude To**	**Measurement Translation Rate**
tonnes	MTU	100
tonnes	oz.	32150.74657
tonnes	tons	1.102311311
tons	kg	907.18474
tons	lakhtonne	0.00000907
tons	lbs.	2000
tons	longtons	0.89285714
tons	oz.	29166.66667
tons	tonnes	0.90718474
bbl	litre	159
MMBtu	therm	0.1

OIL MEASUREMENT CONVERSION CRITERION				
Standard factors	**Metric tonne**	**Long ton**	**Barrels**	**Cubic meters (kilolitres)**
Metric tonne	1	0.984	7.33	1.165
Long ton	1.016	1	7 45	1.128
Barrels	0.136	0.134	1	0.159
Cubic metres (kilolitres)	0.858	0.887	6.289	1

NATURAL GAS AND LNG MEASUREMENT CONVERSION CRITERION						
Standard factors	**Billion cubic metres NG**	**Billion cubic feet NG**	**Million tonnes oil equivalent**	**Million tonnes LNG**	**Trillion British thermal units**	**Million barrels oil equivalent**
1 billion cubic metres NG	1	35.3	0.9	0.74	35.7	6.6
1 billion cubic feet NG	0.028	1	0.025	0.021	1.01	0.19
1 million tonnes oil equivalent	1.11	39.2	1	0.82	39.7	7.33
1 million tonnes LNG	1.36	48	1.22	1	48.6	8.97
1 trillion British thermal units	0.028	0.99	0.025	0.021	1	0.18
1 million barrels oil equivalent	0.15	5.35	0.14	0.11	5.41	1

ANNEX V – DATA CATEGORIES COVERED

(3.2) Legal framework		
Data output for legal codes and regulations		
• Legislation: Mineral, Oil/gas • Regulation(s) directives	• Environmental protection • Safety and health • Labor	• Policy document • Others considered relevant
Legal profile of licenses by type		
• Scale of licenses/concessions • Type of mineral	• Requirements for holding license/concession	• Limits on ownership by type of license/concession
(3.2) Fiscal regime country profile		
• Mineral/ Oil and gas specific taxes	• Corporate Income Tax (CIT) • Other taxes and payments	• Tax holidays etc.
(3.3) Overview of extractive industries		
• Mineral/oil/ natural gas projects by stage	• Property, owner, development stage, activity status	• Primary and proven reserves and resources
(3.4) Contribution of extractive industries to economy		
• Value and percentage share of GDP • Value and percentage share of exports	• Value and share of contribution to government revenues	• Employment generation
(3.5) Production data		
• Production/price data by commodity	• Conversion for concentrate to refined	• Export value - Trade code
(3.6) State participation		
Data output recommendations for State participation		
• Rules governing state participation • Tools for state participation	• SOE finances; total assets and liability • Equity ownership and State control	• Controlling ownership • Payments to State / SOE beneficiaries
(3.7) Distribution of revenues		
Data output for distribution of revenues from the extractives sector		
• Extractive revenues budget allocation • Legal framework governing revenue fund distribution • Regulations governing state budget allocations and budget deficits	• Revenue distribution between federal, district and local governments • Revenues distribution between current and future expenditure • Legal framework governing sovereign wealth funds	• Direct revenue payments to local communities • Share of total revenues received from the mine/firm by local communities/government
(3.8) Further information on revenue management		
• Resource Revenue Account (RRA) • Investment committee for extractive revenues • Resource revenue management law	• Information on extractive revenues management included in the budget document	• Investment in local community by extractive company in detail
(3.9) Register of licenses		
• Property details, identifiers • Location, • Commodities • Area, geospatial data • Coordinate system • Source of data	• Ownership details • Other claims owned by the same owner • License details and type	• Application date and date granted • Expiry/ first renewal date • Date of refusal, reason for refusal • Current status, information last updated • Exemptions offered • Work to be performed as license requirement

ANNEX V – DATA CATEGORIES COVERED

continued

(3.10) Allocation of licenses		
Data output under allocation of licenses		
• Allocation process	• Details for bidding process	
(3.11) Beneficial ownership		
Data output for beneficial ownership		
• Company name/ Registration number • Type of entity and business sectors	• List of board members	• List of shareholders with beneficial ownership • For each listed beneficial owner (individual/firm)
(3.12) Contracts		
• Contract title, context and value • Description and current status of contract • Start, end and signature date • Address and contact point of the extractive company • The government agency responsible for authorizing the contract	• Documents and attachments related to the contract, including any notices.	• Information related to the implementation of the contract.
(4.1) Revenue streams		
• License, concession fees • Application /annual /rental fees • Acreage/transit fee (oil and gas) • Transportation and terminal operations fee • Environment related: Water use, land use • Entry fees	• Service charges and fees • Profits/ windfall taxes • Corporate income tax • Variable income tax • Withholding tax (dividends, interest and fees) • Personal income tax • Capital gains tax • Social security contributions	• VAT/Sales tax (net) • Excise duty • Real estate tax • Local/district taxes • Stamp duties • Land tax • Tax on vehicles and self-moving mechanisms • Penalties
(5.3) Assessment by independent Administrator		
Data collection and processing constraints; EITI process related issues; Human resource constraints; Stakeholder constraints		