

A black and white photograph of a person's hands pouring molten metal from a ladle into a mold. The background is a blurred industrial setting. The bottom portion of the image is overlaid with a graphic of a jagged, sawtooth-like border in shades of orange and yellow, representing molten metal.

*3TG+C Smelter and Refiner Disclosure Conformance
with Leading Due Diligence and Assurance Standards*

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Executive Summary

Positioned at the ultimate supply chain pinch point, smelters and refiners exercise comparatively high discretionary power from whom, and on what terms, they source their minerals.

Due diligence standards and programs applicable to smelters or refiners (SORs) in tin, tungsten, tantalum, gold (3TG) supply chains have made positive strides since they were established. Many of them are less than a decade old, and on-the-ground impact is being reported in the case of tin, tungsten, tantalum (3T). Yet, with that progress, performance expectations are increasing, and it is in this spotlight that gaps are revealed.

First, we assess and score the disclosure conformance of the SORs against industry-led due diligence standards against which the SORs are audited, as well as their disclosure performance with the internationally recognized *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*. As the public disclosure requirements of these standards incorporate elements of the OECD's *Step 5 (Report annually on supply chain due diligence)*, and each standard differs in criteria and ore applicability, we also assess them against the *source code*. We bring cobalt into the equation (making the in-scope minerals 3TG+C) given reports of child labor in its supply chain, which is also in-scope of the OECD guidance.

a. Industry-led assurance standards <-> SOR disclosure conformance

SORs have agreed to certain standards as members of standard-setting organizations and/or trade associations, that have to some level been aligned to the OECD Due Diligence Guidance. Disclosure performance -- to which SORs are bound as members of standard-setting organizations and/or trade associations -- was assessed against the following industry-led standards:

1. Responsible Mineral Initiative's (RMI) Responsible Minerals Assurance Process (RMAP) audit protocols for tin, tungsten and tantalum;
2. Responsible Jewellery Council's (RJC) *Chain of Custody Standard*;
3. London Bullion Market Association's (LBMA) *Responsible Gold Guidance and Third Party Audit Guidance*;
4. Chinese Chamber of Commerce for Metals, Minerals & Chemicals' (CCCMC) "*Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains*" and the Responsible Cobalt Initiative (RCI);
5. Dubai Multi Commodities Centre's (DMCC) *DMCC Rules for Risk Based Due Diligence in the Gold and Precious Metals Supply Chain*; and
6. Tungsten Industry -- Conflict Minerals Council (TI-CMC) framework.

Tables 1 and 2 below depict the disclosure performance tally of associated SORs against the respective mineral or standard-setting body. In addition, SOR disclosure performance was averaged according to mineral exchanges and/or trade associations to which specific SORs were party (see *Table 3*), namely the London Metal Exchange (LME), Shanghai Gold Exchange (SGE), International Tin Association (formerly ITRI), and the Indonesian Commodity and Derivatives Exchange (ICDX).

Table 1: Standard-specific disclosure scores of SOR members

standard	OECD	RMAP	RJC	LBMA	CCCMC	RCI	DMCC	TI-CMC
mineral(s)	3TG+C	3TG	G	G	3TG+C	Cobalt	G	Tungsten
# of associated SORs	370	255	18	69	111	21	13	35
SOR disclosure score, combined average	15%	27%	23%	48%	13%	6%	51%	2%

Based on the data presented in *Table 1*, we observe mixed conformance with the disclosure elements of assurance standards.

Where we observe public disclosure non-conformance with agreed-upon due diligence and assurance-related disclosure requirements among verified SORs, questions about audit quality and the enforcement of standards are raised, given that audits should have challenged the lack of required disclosure.

Consequently, we conclude that the audit results presented to stakeholders have the appearance of full conformance on industry standards, even where the required due diligence disclosures are in large part absent. It is critical that verified SORs implement the standards in their entirety (including the disclosure requirements) or else not be awarded verification.

Minimal public disclosure also raises additional questions about the existence, thoroughness and effectiveness of the SORs' own due diligence programs.

b. OECD Due Diligence Guidance <-> SOR disclosure performance

A second lens is applied to gauge SOR disclosure performance with the broader application of OECD Due Diligence Guidance. *Table 2* shows that the gold and tantalum industries are slightly ahead of their peers, and *Table 3* that SORs trading through the SGE perform slightly higher in the aggregate.

Table 2: OECD-based disclosure scores per mineral

mineral	Tin	Tungsten	Tantalum	Gold	Cobalt
# of associated SORs	89	47	46	150	38
SOR disclosure score, combined average	10%	15%	19%	21%	4%

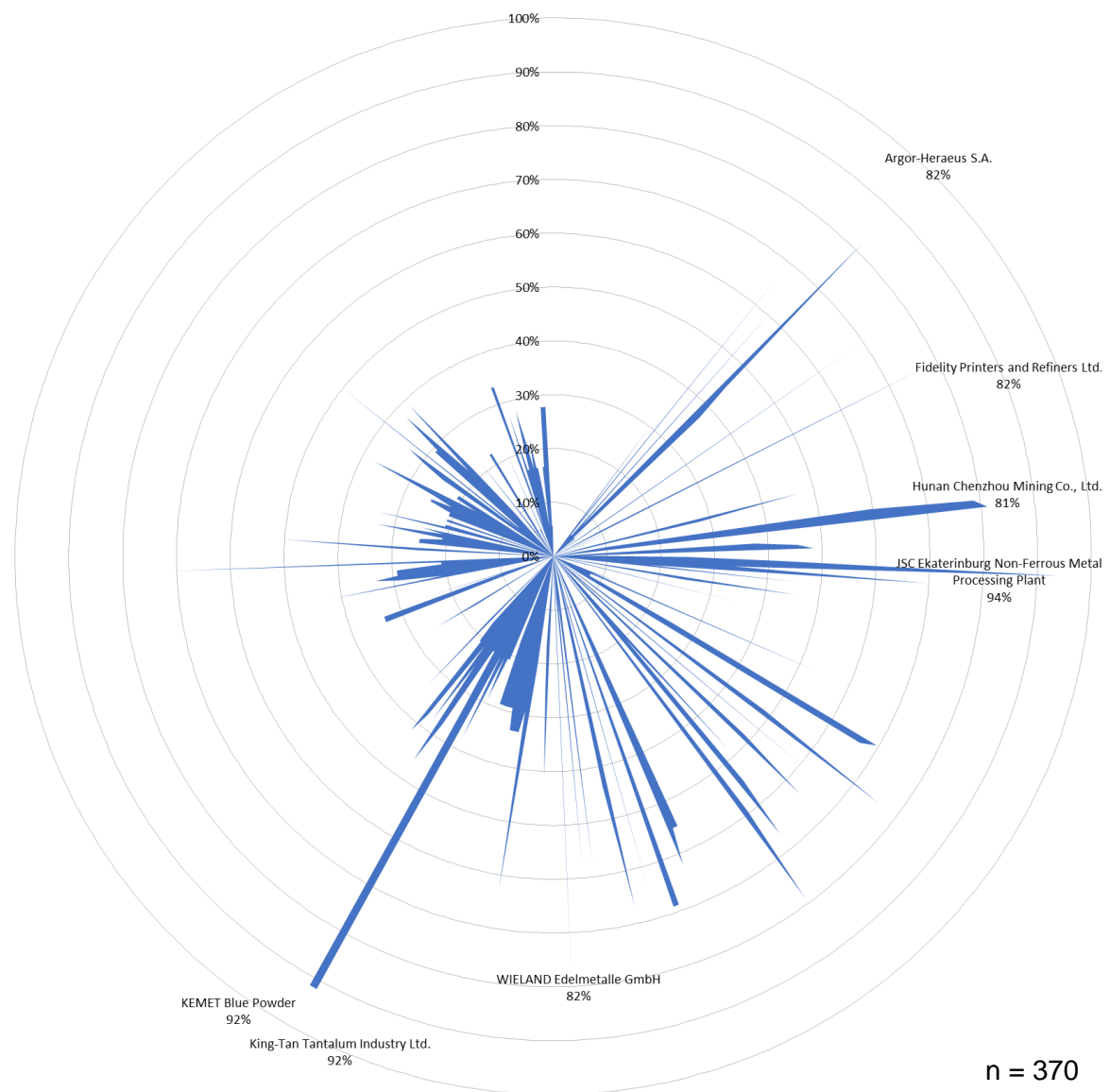
We also observe that beyond the potential of funding of armed group in the DRC and adjoining countries, public reporting on specific, well-documented risks which are part and parcel to the OECD Due Diligence Guidance -- e.g. UN sanctions contravention, money laundering, or the worst forms of child labor -- is close to non-existent.

Table 3: OECD-based disclosure scores of SORs per exchange/association

exchange/association	LME	SGE	ITRI	ICDX
# of associated SORs	48	22	17	33
SOR disclosure conformance score, combined average	17%	33%	22%	8%

Some SORs are more transparent than others, and we observe a high variance in their disclosure performance according to the OECD (see Figure 1). SORs with above-average transparency are noted with their summary score. There are several good examples, indicating that progress in meeting transparency requirements is indeed achievable.

Figure 1: Summary OECD-based disclosure scores of 370 SORs



Foreword

February 23, 2018

Connecting the upstream and downstream flow of the supply chain, and completing the transformation from ore to metal, smelters and refiners (SORs) are an obvious key link in 3TG+C supply chains.

Action – or inaction – on the part of SORs relative to due diligence and assurance standards have serious implications for global ore supply chains. Purchasing power can do incredible good if exercised responsibly, or conversely can do incredible damage if wielded indiscriminately.

Little was known about their practices until due diligence guidance, standards, and audit programs, most less than a decade old, contributed to a clearer focus on SORs. Public scrutiny of companies deep in a product supply chain is generally limited. This report is amongst the first to shed light on the public disclosure aspect of SOR due diligence programs and audit results.

Until technology is able to help solve some of the cardinal human rights problems deep in supply chains, public disclosures are the foundation of transparency and accountability. No supply chain can be more responsible than its least responsible constituent. SORs bear a special burden in this regard.

This study serves two purposes. First, it examines certain shortcomings in existing due diligence assurances. The second is more prospective – identifying risks that are beyond the currently operationalized scope, yet are within the existing scope of OECD on a broader basis. Linking these purposes together is the hope that due diligence disclosures and audits will improve towards existing standards, while also preparing for the next development milestone.

In doing so, exporting countries may be strengthened by their natural riches rather than harmed.

At last, in Jean-Jacques Rousseau's stag hunt scenario, when the hunters cooperate they are able to encircle and trap the stag. If, however, one of the hunters defects to catch a rabbit, everyone loses the bigger prize. At the moment, it seems that the joint hunt for eliminating human right problems in 3TG+C has still far a long way to go. I hope that this report will help set the right parameters that SORs will more clearly use the precious opportunity they have to responsibly engage 3TG+C markets.

I wish you risk and responsibility in all your endeavors,

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Calvin LeSueur performed the bulk of the assessments with careful precision, assisted by Du (Celia) Xiani, who analyzed the Chinese SORs. This report was authored by Dr. Chris N. Bayer, Jesse H. Hudson and Calvin LeSueur. Jiahua (Java) Xu prepared the graphs and scorecards.

Finally, we wish to extend our grateful appreciation to the OECD team, especially to Tyler Gillard and Hannah Koep-Andrieu, for your vision and leadership.

I. Context

a. Due diligence- and audit standard-setting bodies

The following due diligence- and audit standard-setting bodies address some aspects of the above enumerated risks. While there has been some adaptation of their standards and/or audit protocols over the past years, each of their standards and/or audit protocol is scoped to a specific set of objectives.

1. OECD

Organisation for Economic Cooperation and Development (OECD): After rounds of multi-stakeholder consultations, in 2011 the OECD released an internationally-recognized due diligence framework, the "OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas."¹ The 5-step framework has served as the authoritative reference for 3TG market actors bar none, and was also used to assess issuer due diligence conformance under Dodd-Frank Section 1502. The 3rd edition of the guidance was published in 2016.²

The transparency dimension as laid out in "STEP 5: REPORT ANNUALLY ON SUPPLY CHAIN DUE DILIGENCE" is assessed in this study.³ As indicated previously, public disclosure of due diligence results (i.e., Step 5), is a specific element of every due diligence

standard reviewed in this study. Therefore, all SORs in this study are assessed against the OECD due diligence standard as a minimum.

In 2016 the OECD commissioned the “Alignment Assessment of industry programmes against the OECD Due Diligence Guidance”⁴ to assess the level of conformance of the main industry-led assurance standards and programs with the OECD guidance. For every step of the OECD’s 5-step framework, the Alignment Assessment indicated strengths, except for Step 5-Reporting: “Some form of company reporting requirements in place at most programmes, but there were no common areas of strength.” In the way of key areas for improvement, the team identified two:

- “Ensure consistent, annual and public reporting by companies on due diligence processes and performance”;
- “Ensure public reporting describes companies’ due diligence management approach, risk assessment findings and risk mitigation measures undertaken – in a meaningful level of detail.”

2. RMI

Responsible Minerals Initiative’s Responsible Minerals Assurance Process (RMAP):

First started in December 2009 by the Electronic Industry Citizenship Coalition (EICC) (now the Responsible Business Alliance) and the Global e-Sustainability Initiative (GeSI), the concept of an assurance system that oversees 3TG SOR audits saw the first compliant designation awarded in December of 2010. Formerly the Conflict Free Smelter Program, RMAP includes independent third-party audits, public list of confirmed/identified SORs, Country of Origin reporting to RMI members, public grievance mechanism, and the Risk Readiness Assessment (RRA) tool that covers 31 issue areas, beyond conflict and security.

As of January 2018, almost all confirmed tantalum smelters in the world, most of the tin and tungsten smelters, and the majority of gold refineries have been deemed “conformant” to RMAP either directly by the RMI or via cross-recognition with RJC or LBMA. *Table 4* tallies the RMAP active⁵ and conformant⁶ SORs.

Table 4: RMAP active and conformant SORs

	Tantalum	Tin	Tungsten	Gold
Active SORs	0	3	3	8
Conformant SORs	42	71	41	101

Source: RMI,⁷ as of February 10, 2018

One element of the RMI/CFSP program is its “mutual recognition program” initiated in 2012. The RMI, the London Bullion Market Association (LBMA), and the Responsible Jewellery Council (RJC) announced mutual cross-recognition of independent, third party gold refiner audits, in order to reduce duplication for refiners, to support their efforts in implementing the OECD Due Diligence Guidance and complying with the responsible

sourcing legislation. The schemes covered under this cross-recognition policy are LBMA Responsible Gold Guidance, RMI Responsible Minerals Assurance Process Gold Standard and RJC Chain-of-Custody (CoC) Standard (Provision 10 only). While RMI and RJC recognize LBMA audits, LBMA no longer recognizes audits other than those conducted by an LBMA-approved auditor.

RMI has published two audit protocols, one specific to tin and tantalum,⁸ and one for tungsten.⁹ For gold, RMI has developed what they call a “Gold Standard and Instruction.” The audit protocol for tin and tantalum provides unique transparency requirements for SORs processing those metals, and these requirements were included as indicators in this study and applied to RMI-conformant tin and tantalum smelters.¹⁰

For the purposes of this study, we only associate “conformant SORs” with RMI/RMAP, as they are fully accountable to RMAP standards.

3. *LBMA*

London Bullion Market Association (LBMA): As one of the world’s largest central gold bullion accreditors, the gold refiners on the LBMA’s Good Delivery List (69 as of February 10, 2018¹¹) reportedly produce 85% to 90% of globally refined gold.¹² These gold refiner members are subject to the LBMA’s Responsible Gold Guidance (RGG) that includes risk-based due diligence to avoid contribution to conflict and WFCL.¹³ Refiners on the Good Delivery List must undergo an independent audit by an LBMA-approved auditor against the RGG standard.

Pertinent to this assessment is LBMA’s Responsible Gold Programme – Third Party Audit Guidance v.3 1/09/2017, as well as the LBMA Responsible Gold Guidance version 6,¹⁴ which came into effect January 1, 2016. While v.7¹⁵ came into effect January 1, 2018, as refiners are to act accordingly for 2018, this newest LBMA standard was not applied in this study. In v.7 the LBMA notably expanded the Responsible Gold Guidance to add information on sourcing responsibly from the ASM sector. Also, as of January 2017, Country of Origin (COO) reporting to the LBMA, as a part of independent audits, became mandatory for LBMA’s gold refiner members.¹⁶

4. *RJC*

Responsible Jewellery Council (RJC): RJC’s Chain-of-Custody (CoC) Standard¹⁷ was launched in 2012 “to support claims for responsibly sourced jewellery materials (known as CoC material), produced, processed and traded through the supply chain.” Applicable to gold and other precious metals, the standard “requires companies to have a policy and risk management frameworks for conflict sensitive sourcing practices, drawing on the OECD Due Diligence Guidance,” as well as address human rights, labor standards, environmental impact, and business ethics.

RJC has “members” and “CoC certified members,” the former which must be CoC certified within 2 years of joining.¹⁸ Whereas the RJC’s Code of Practices Certification applies to all members, the CoC -- a voluntary certification standard -- is the only one with a due diligence/responsible sourcing element. Most RJC members are not CoC certified. For the purposes of this study, we include 18 “CoC certified members” that are fully accountable to RJC standards.

5. CCCMC

Chinese Chamber of Commerce for Metals, Minerals & Chemicals (CCCMC): Starting with an MOU -- the “China-OECD Medium Term Vision and Action Plan for 2015-2016” -- the CCCMC and the OECD reached an accord to develop Chinese due diligence guidelines, culminating in the “Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains.”¹⁹ Inspired by the OECD due diligence guidance, the Chinese guidelines “apply to all Chinese companies which are extracting, trading, processing, transporting, and/or otherwise using mineral resources and their related products and are engaged at any point in the supply chain of mineral resources and their related products.” The guidelines identify serious risks in the minerals markets, and stipulate due diligence procedures, transparency, and assurance measures for all SORs.

The Guidelines features four disclosure requirements,²⁰ each which was turned into an indicator:

1. publicly report on "their supply chain due diligence policies"
2. publicly report on "their supply chain due diligence practices"
3. publicly report on "identified risks"
4. publicly report on "steps taken to mitigate these risks"

In addition to assessing cobalt smelters against these disclosure requirements, as many Chinese 3TG SORs are already CCCMC members and have made public pledges, we also assessed the Chinese 3TG SORs against the disclosure requirements of the CCCMC, in addition to the OECD requirements.

6. RCI

Responsible Cobalt Initiative (RCI): In late 2017, the RCI registered as a legal entity in China²¹ with the following objective:

Have downstream and upstream companies recognize and align their supply chain policies with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas and the Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains in order to increase transparency in the cobalt supply chain and improve supply chain governance.²²

“As a priority,” the new organization states, “the RCI intends to address the issues of the worst forms of child labor.”²³ Currently, cobalt smelters are encouraged to be audited by large multinational companies procuring cobalt-based products, although the RCI itself does not have or sponsor its own audit program.²⁴ The RCI had 16 corporate members as of August 2017.

7. DMCC

Dubai Multi Commodities Centre (DMCC): In 2017 the DMCC released the “DMCC Rules for Risk Based Due Diligence in the Gold and Precious Metals Supply Chain -- Version 1.1/2017.”²⁵ Accredited members follow the Accreditation Standards (which comprise the Dubai Good Delivery standard and the Market Deliverable Brand Standard) and are named in the DMCC Good Delivery list.²⁶

For the purposes of this assessment, we employ the DMCC Rules that concern annual reporting: “Rule 5. Annual Reporting on Responsible Supply Chain Due Diligence.”²⁷

8. TI-CMC

Tungsten Industry - Conflict Minerals Council (TI-CMC): Premised on Dodd-Frank Section 1502 and the OECD Due Diligence Guidance, the tungsten-based sector developed a “framework through which its members can provide industry stakeholders, downstream tungsten consumers with conflict mineral reporting and disclosure obligations as well as the public at large with their assurances that the tungsten products they supply are conflict free.”²⁸ TI-CMC “recognizes that refiners in the industry that process tungsten raw materials play an essential role in ensuring that tungsten is conflict free” but also “considers all suppliers and the members of the underlying supply chains as valuable stakeholders in the overall process that leads to the success of the sector.”

TI-CMC members must fulfill a host of requirements:

- a. support the TI-CMC principles and adhere to its framework;
- b. submit annual TI-CMC progress report (that describes self-assessment and other efforts to implement the TI-CMC framework);
- c. report on the origin of tungsten supply (within the five categories as outlined in the TI-CMC policy via a self-declaration);
- d. commit to undergo RMAP compliance auditing within a period of 2 years from the start of the TI-CMC membership (to become Category A member).

While TI-CMC is a separate due diligence program, smelter audits are conducted through the RMI. As of January 2018, TI-CMC had 26 compliant members (Category A members).²⁹

b. Mineral exchanges and trade associations

3TG+C also passes through exchanges – operationally defined as offering a trading platform for sellers and buyers -- that count specific SORs as their members. While the International Tin Association's iTSCi could be considered a standard-setting entity, as its members also trade on its platform, it may also be considered a trade association. The public disclosure performance of SORs are tallied against the following four exchanges and/or associations of which they were a member (as of publishing date).

1. *LME*

London Metal Exchange (LME): With 157 million lots totaling 3.5 billion metric tons of metals for a total price of US\$10.3 trillion, the 140-year-old exchange is the largest in the world.³⁰ While London-based, it is owned by Hong Kong Exchanges and Clearing, which bought it for £1.4 billion in the summer of 2012. Cobalt and tin smelters doing business through the LME were assessed in this study, along with copper companies that produce gold as a byproduct. This study included smelters or refiners appearing on the LME list of Approved Brands.³¹

2. *SGE*

Shanghai Gold Exchange (SGE): Established in October 2002 and supervised by People's Bank of China, the SGE provides trading, clearing, delivery and vaulting services of gold, silver and platinum. Almost all of Chinese domestic gold mining output is refined by SGE-approved refiners and then sold through the SGE. As such, it ranks the 4th largest gold exchange by gold trading volume in the world (18,500 tons in 2014, with average daily volume of 76 tons).³² The performance of gold refiners listed on the SGE's *List of Members*^{33,34} were assessed in this study.

3. *ICDX*

Indonesian Commodity and Derivatives Exchange (ICDX): Based in Indonesia, ICDX offers a range of commodity products, which includes gold, tin, olein, and crude palm oil.³⁵ Tin flowing through the ICDX was assessed in this study.

4. *ITRI*

ITRI Tin Supply Chain Initiative (iTSCi): The International Tin Association's iTSCi³⁶ certainly could be grouped with the due diligence- and audit standard-setting bodies given its work in facilitating 3T due diligence in the DRC and surrounding countries, e.g. its tagging and bagging system in upstream supply chains. Yet it also functions as a trade association,

since it offers a trading platform for sellers and buyers. Registered members may trade within the initiative.³⁷ Thus, the scores of 3T smelters that are iTSCi members were tallied.

II. Methods

a. Sample frame

This study included in its sample frame the world's main industrial 3TG+C smelters. As a first inclusion criterion we selected SORs that are party to a recognized standard-setting body and/or assurance system. Our second inclusion criterion we took a randomized sample of 70 additional SORs (gold – 45, tantalum – 3, tin – 16, tungsten – 6). All of RMI's currently conformant 3TG SORs³⁸ were assessed. Specifically for gold, as the LBMA list features gold refineries not listed by RMAP,³⁹ we cross-referenced the RMI's list with the LBMA's Good Delivery List to capture all relevant gold refiners.⁴⁰ Eighteen (18) RJC certified refiners overlapped with LBMA and/or RMI/RMAP validated refiners, and were included in the sample. As for cobalt, given that the RCI represents a relatively new industry-led initiative thus far with a limited membership, 38 cobalt smelters were included in this study (ten Chinese cobalt smelters are featured in the *Global and China Cobalt Industry Report, 2017-2021*,⁴¹ fourteen cobalt smelters were listed by the LME,⁴² and additional large cobalt smelters were identified through a desk review).

b. Data

The data collected in this study were drawn from publicly-available sources, collected between November 2017 and January 2018. Each SOR's website (when available) was individually accessed to retrieve the disclosures as stipulated per each relevant standard and guidance. Many disclosures were also found on standards' websites, such as audit reports from the LBMA Good Delivery list, and conflict mineral policies from the RMI's list of conformant smelters and refiners. The types of disclosure documents taken into account were supply chain due diligence policies, annual supply chain due diligence reports, conflict mineral policies/ statements, procurement policies, as well as the publicly available compliance/assurance reports, LBMA summary reports, and other audit reports. The SORs that did not seem to possess a website were still evaluated based on the information provided by the assurance program, e.g. the compliance report hosted on LBMA's Good Delivery List.⁴³ The policies of 4 SORs were not in English and were evaluated in their original language. All audit reports found were in English.

The source documents of the collected data, as well as the raw data itself, are found [here](#) on the DI website.

c. Evaluation criteria

Indicators are drawn solely from the verbatim in the individual standards and audit protocols, and are based on their respective disclosure requirements. As some standards are only applicable to specific minerals/metals, each standard has a separate set of indicators.

Appendix B: Evaluation Instrument reproduces, in full, the set of indicators applied in this study.

d. Scoring

Scores reflect of the quality of a company's disclosure-specific compliance/conformance with the specific standard or conformance to the OECD Due Diligence Guidance. Each SOR, at a minimum, received an OECD disclosure conformance score, and then a further score for every assurance standard-setting body or exchange/association with which it is associated.

For the sake of clarity, and to minimize subjectivity, binary yes/no criteria were applied to indicate the presence or absence of the disclosure element. Furthermore, no weighting was employed: every indicator was worth one point.

Only when the SOR provided credible assurance with sufficiently explicit detail, outlining that it exclusively uses recycled minerals, and there was no publicly available information to the contrary, was the company eligible to receive a pass on reporting on OECD steps 3 and 4, i.e. the SOR received a Not Applicable (NA) on those two steps. The other instance that an NA was assigned was when the particular standard/criteria addressed a mineral that the SOR did not process.

e. Evaluation team, competing interests statement

The research team comprised Calvin LeSueur, M.S., Jesse H. Hudson, J.D., Du (Celia) Xiani, J.D., and Chris N. Bayer, PhD served as the study's Principal Investigator. The data were collected and scores awarded solely by the evaluation team. The evaluation team was remunerated by Development International (DI), a wholly independent, not-for profit organization registered in Germany.

The study's Principal Investigator and research team declare that they have no competing interests, nor conflict of interests, in their execution of this evaluation. They do not knowingly own stocks or other forms of equity in any evaluated issuer or in the entities making up the study's Stakeholder Forum. Neither DI nor the project team members provide any services to any of the due diligence programs evaluated. In sum, they had no known vested interests vis-à-vis the individual scores and findings of this study.

f. Stakeholder Forum

The study's Stakeholder Forum functions as a peer review mechanism that offers critique at two junctures of the research: (1) review of the study's indicators just before the evaluation framework is deployed, and (2) review of the study's draft evaluation report. The Forum had absolutely no involvement in data collection, evaluation, or scoring. All findings and any errors are fully DI's responsibility. Furthermore, participation in the Stakeholder Forum is not an endorsement of the report or its findings.

The following individuals volunteered to serve on the study's Stakeholder Forum:

Andrew Britton	Kumi Consulting
Carrie George	Brilliant Earth
Dr. Katie Böhme	iPoint systems
Dr. Tim Holt	Claigan Environmental
John Kanyoni	Metachem Sarl
Lawrence Heim	Elm Sustainability Partners
Ryan Lynch	BSI Supply Chain Services & Solutions

g. Scorecards and data review requests

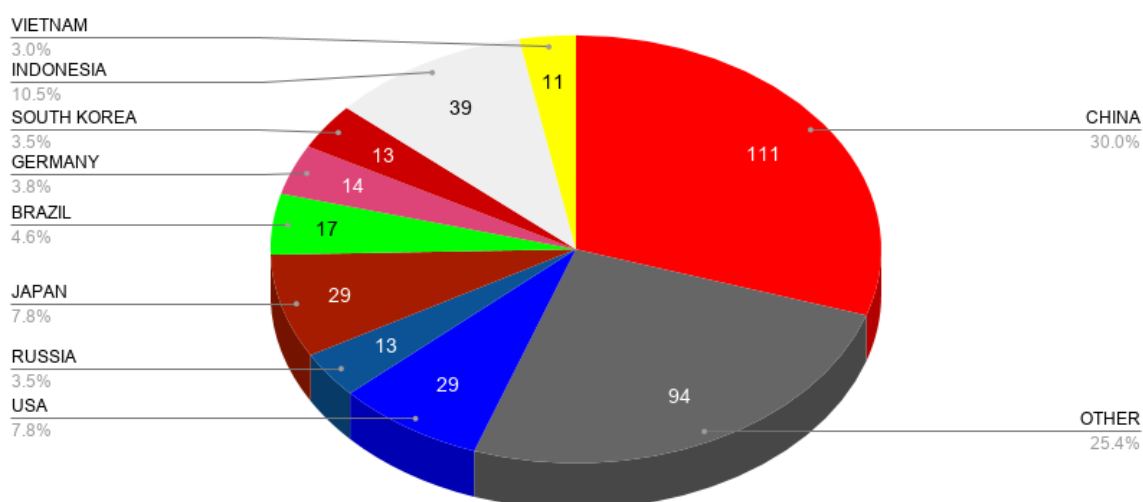
The SOR scorecards are available free-of-charge on the DI website in English and Mandarin. A data review option for individual SORs, who disagree with or have questions about their scorecard, exists in the form of a consultation. The consultation period shall take place throughout the month of March, 2018. To book a consultation, please consult [this page](#). In the event that DI would choose to make a change to a score based on the consultation, the consultation fee is reimbursed.

III. Findings

a. Number and type of SORs

The 370 SORs assessed in this study are scattered all over the globe (see *Figure 2*). Yet China is home to almost one third of them.

Figure 2: SOR location by country



In total we assessed 38 cobalt smelters, 150 gold refineries, 46 tantalum smelters, 89 tin smelters, and 47 tungsten smelters.

Of those surveyed, 228 or 62% had a supply chain due diligence policy (conflict mineral or otherwise), 23 or 7% of SORs had published an Audit Report, and 36 or 10% of SORs had a Compliance Report.

b. SOR disclosure scores aggregated by mineral

With respect to OECD-based disclosure performance among assessed SORs, tantalum and gold edge ahead of their peers (see *Table 5*). We hypothesize this is because of several factors: the tantalum and gold industries, as a whole, have been active in pursuing supply chain due diligence efforts. Also, many gold and tantalum SORs had published detailed audit reports, which helped them score better on all indicators (including management systems and risk management).

Table 5: SOR public disclosure conformance score per mineral and standard, combined average

	Tin	Tungsten	Tantalum	Gold	Cobalt
OECD	10%	15%	19%	21%	4%
RMAP (CFSP)	24%	13%	31%	34%	
RJC				23%	
LBMA				48%	
CCCMC	10%	16%	16%	18%	6%
DMCC				51%	
RCI					6%
TI-CMC		2%			

c. SOR disclosure conformance with due diligence guidance and assurance standards

Three hundred and six (306) SORs were part of one or more industry-led due diligence assurance programs. Amongst their peers, the LBMA and DMCC audited gold refiners inched ahead of the competition with regard to their general disclosure performance (see *Table 6*). As each assurance program has its own disclosure criteria, against which each associated SOR was individually assessed, these findings reflect the degree to which each assurance program’s disclosure requirement were enforced and respected.

Table 6: SOR disclosure conformance score per standard

	OECD	RMAP	RJC	LBMA	CCCMC	RCI	DMCC	TI-CMC
mineral	3TG+C	3TG	G	G	3TG+C	C	G	Tungsten
# of SORs in sample *	370	255	18	69	111	21 **	13	35
SOR disclosure conformance score, combined average	15%	27%	23%	48%	13%	6%	51%	2%

* As some SORs appear in either two or three of these programs, some SORs are double- or triple-counted for the sake of comparison.

** Not all of 21 Chinese cobalt smelters are formally part of the RCI

The average OECD-based disclosure performance of all SORs is 15% (see *Table 7*, bottom left cell).

SORs belonging to an assurance program that effectively mandates the publishing of audit, compliance, or assurance reports performed better, on average, than those that did not. In other words, the average scores of SORs belonging to any industry-led assurance program are higher than average score of all SORs, factors of which are variance in transparency and variance in standards.

Table 7: SOR disclosure conformance score per indicator

indicator	OECD (3TG+C)		RMAP (3TG)		RJC (G)		LBMA (G)		CCCMC (3TG+C)		DMCC (G)		total (3TG+C)	
	%		%						%		%		%	
1. Due diligence policy?	62%	228/370	86%	220/255	100%	18/18	83%	57/69	50%	56/111	77%	10/13	62%	228/370
2. Management structure described?	16%	61/370	22%	56/255							69%	9/13	16%	61/370
3. Designated responsible manager?	22%	81/370	30%	76/255							77%	10/13	22%	81/370
4. Described systems of transparency and information collection?	35%	52/150									77%	10/13	35%	52/150
5. Control systems described?	40%	88/220	55%	85/155									40%	88/220
6. Shared data yielded from control systems and how it has strengthened due diligence?	8%	30/370	11%	28/255							31%	4/13	8%	30/370
7. Record-keeping system described?	13%	48/370	17%	44/255							69%	9/13	13%	48/370
8. Explained methods for disclosing all suppliers?	11%	40/370	15%	37/255							69%	9/13	11%	40/370
9. Explained methods for sharing information throughout supply chain?	25%	37/151									77%	10/13	25%	37/151
10. Disclosed information on payments made to governments?	0%	0/370	0%	0/255							0%	0/13	0%	0/370
11. States the SOR avoids minerals that directly or indirectly finance or benefit illegal armed group from conflict-affected regions?			86%	98/114									74%	101/136
12. Covers tin/tantalum materials?			86%	98/114									74%	101/136
13. Covers the DRC and adjoining countries?			85%	97/114									71%	97/136
14. Is part of the standard operating procedures and training?			13%	15/114									11%	15/136
15. Has an effective date for when it was established?			52%	59/114									43%	59/136

A. Due Diligence Policy

	16. Is shared with suppliers (e.g. through contractual terms)?			17%	19/114								14%	19/136	
	17. Policy in English?							72%	50/69				53%	80/152	
B. Risk Assessment and Management	18. Published risk assessment (3T) or risk reporting (G)?	14%	52/370	19%	48/255					9%	10/111	69%	9/13	14%	52/370
	19. Outlined methodology of risk assessment?	17%	62/370	23%	58/255					15%	17/111	62%	8/13	17%	62/370
	20. Explained methodology of risk assessment?	2%	4/220	2%	3/155					2%	2/87			2%	4/220
	21. Included whether and how company collaborated with upstream companies?	17%	26/151							16%	4/25	54%	7/13	17%	26/151
	22. Included how all joint work considered company specific circumstances?	1%	2/152							0%	0/26	8%	1/13	1%	2/152
	23. Disclosed the actual or potential risks identified?	11%	17/151							12%	3/25	46%	6/13	11%	17/151
	24. Explained how red flags were identified?	7%	10/151							12%	3/25	38%	5/13	7%	10/151
	25. Described the red flag suppliers identified?	1%	1/149							4%	1/24	0%	0/13	1%	1/149
	26. Described steps taken to map the red flag supplier operations?	1%	2/150							4%	1/24	8%	1/13	1%	2/150
	27. Described steps taken to manage risks?	17%	64/370	23%	58/255	28%	5/18			14%	15/111	69%	9/13	17%	64/370
	28. Included summary of risk mitigation?	11%	42/370	15%	38/255	17%	3/18			8%	9/111	69%	9/13	11%	42/370
	29. Described training (if any)?	20%	75/370	27%	70/255	39%	7/18			25%	28/111	62%	8/13	20%	75/370
	30. Involved affected stakeholders?	19%	70/370	27%	68/255	28%	5/18			18%	20/111	54%	7/13	19%	70/370
	31. Disclosed efforts to monitor and track performance of risk mitigation?	5%	17/370	6%	15/255	11%	2/18			4%	4/111	38%	5/13	5%	17/370

	32. Disclosed number of instances of disengagement with suppliers?	5%	7/151	7%	7/100	6%	1/18			8%	2/25	23%	3/13	5%	7/151
	33. Grievance mechanism established, publicly available and documented?					11%	2/18							17%	26/150
	34. Grievance mechanism documentation described the type of complaints admissible and the procedures for investigating and addressing grievances?					6%	1/18							4%	6/150
C. Audits	35. Published summary audit reports (OECD/RMAP) or compliance report (LBMA & DMCC ISAE 3000)?	7%	23/338	8%	19/224			50%	19/38			75%	3/4	7%	23/338
	36. included refiner details and audit date?	17%	20/118					50%	19/38			75%	3/4	17%	20/118
	37. included description of audit activities and methodology (when not otherwise described by an industry mechanism)?	17%	20/118					50%	19/38			75%	3/4	17%	20/118
	38. included audit conclusions as they relate to each of the 5 steps of the OECD guidance?	16%	19/118					47%	18/38			50%	2/4	16%	19/118
	39. Published LBMA Summary Report annually?							46%	17/37			50%	2/4	15%	18/118
	40. Published a copy of the Assurance Report (from auditor)?							63%	33/52			92%	11/12	26%	35/133
	41. Published Refiner Compliance Report (from SOR)?							65%	34/52			92%	11/12	27%	36/133
	42. Compliance report includes: Name of refinery?							65%	34/52			92%	11/12	27%	36/133

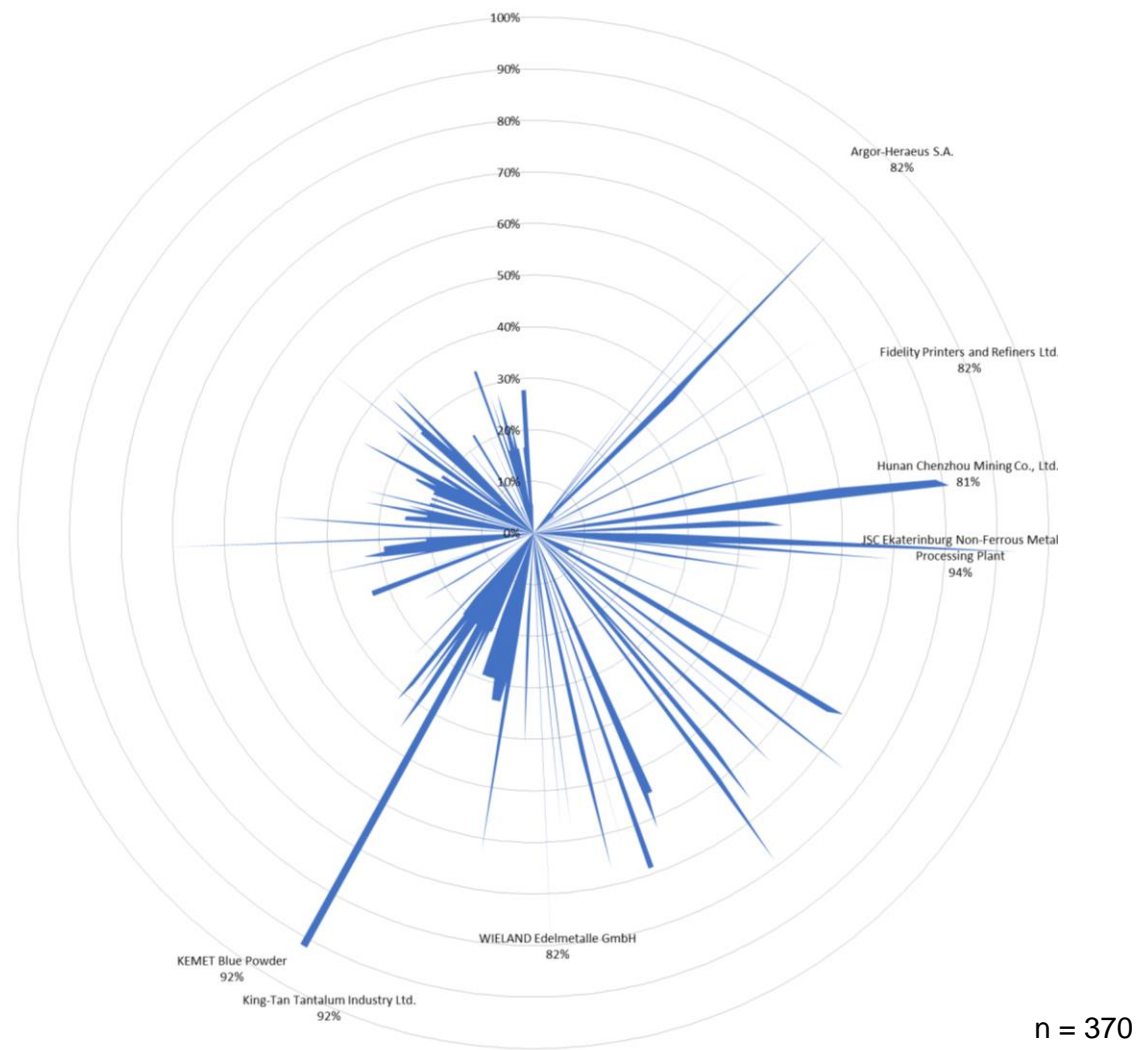
43. Compliance report includes: Time period of compliance?							65%	34/52			92%	11/12	27%	36/133
44. Compliance report includes: Summary of activities undertaken during the period to demonstrate compliance?							62%	32/52			83%	10/12	26%	34/133
45. Compliance report includes: Level of compliance with each step of the LBMA Responsible Gold Guidance?							65%	34/52			92%	11/12	27%	36/133
46. Compliance report includes: Management conclusion statement on compliance with the LBMA Responsible Gold Guidance?							63%	33/52			92%	11/12	26%	35/133
<i>Total</i>	15%		27%		23%		48%		13%		51%		22%	

Sixty-two percent (62%) of SORs were found to have a supply chain due diligence policy, conflict minerals policy, or procurement policy. In this first benchmarking, the threshold for awarding this point was low: we even included brief statements, as long as they were accessible to the public. However, simple conflict minerals statements generally scored poorly on further indicators, as they rarely provided substantial information on due diligence.

Only 11% of all SORs “disclosed the actual or potential risks identified,” and only 17% of all SORs described the steps taken to manage risks, which is the ultimate purpose of due diligence. Not one, or 0%, of SORs disclosed information on payments made to governments in their supply chain due diligence policy. No points were awarded for the common blanket statement to “not misrepresent payments made to governments”, as this does not meet the transparency requirements.

In terms of the general OECD disclosure conformance, some SORs were more transparent than others, and we observed a high variance (see *Figure 3*). SORs with exceptional transparency are noted with their summary score. There are several good examples, indicating that progress in meeting transparency requirements is indeed achievable.

Figure 3: Summary OECD-based disclosure score of 370 SORs



d. Scores aggregated by exchange/association

A comparison of disclosure scores tallied according to in-scope exchange/association shows that gold refiners trading with the SGE edge ahead of other exchanges or associations.

Table 8: SOR disclosure conformance score per exchange/association

type of mineral	LME G, Tin, C	SGE G	ITRI 3T	ICDX Tin
# of associated SORs	48	22	17	33
SOR disclosure conformance score, combined average	17%	33%	22%	8%

IV. Conclusion

The good news is that more than 300 SORs in the world have aspired to meet one or more due diligence standard, and are participating in one or more assurance system. This was not the case a decade ago.

Many SORs in the 3TG+C markets are exposed to a variety of serious supply chain risks. SORs associated with an industry-led assurance system are thus challenged to trace their supply chains with high certainty, conduct thorough due diligence in line with OECD guidance, and fully implement the industry standards of transparency to which they committed.

Specifically with regard to due diligence disclosure, SORs belonging to a due diligence assurance program performed better, on average, than those that did not. Also, we note that the bulk of the existing due diligence efforts and associated public reporting is centered on U.S. legal requirements for 3TG sourced from the DRC and adjoining countries. We however observe substantial gaps with respect to the degree to which SORs have fulfilled their public reporting obligations on due diligence efforts, which does give rise to the question how effectively SORs are actually conducting due diligence, if at all.

Audits across due diligence standards have apparently failed to detect public disclosure nonconformance with respect to the transparency requirements of the particular standard. Audits have therefore, in large part, inaccurately represented full conformance of conflict minerals SORs to the due diligence standard(s) against which they were audited. It is critical that verified SORs implement the standards in their entirety -- including the disclosure requirements -- or else not be awarded verification.

The absence of public disclosure on specific risks required by the relevant due diligence standards raises additional questions about the existence, thoroughness and effectiveness of substantive due diligence program elements about which the SORs were silent.

In light of our findings, we conclude that -- by and large -- the industry-led assurance initiatives assessed herein are not effectively enforcing their own standards. Moreover, the vast majority of SORs are using formulaic standard language that fails to meet their transparency requirements. However, a select few SORs have adopted well researched, company specific policies, and report annually on the changing landscape of the risks they identify and their response to those relevant risks.

With increased attention on these disparities, SORs that do establish their credentials and provide sufficient transparency and assurance vis-à-vis their customers, the public, auditors, and stakeholders, the sustainability- and responsibility-oriented markets will reward with an increasing market share.

As things stand, the due diligence standards featured in 3TG+C assurance programs must be fully executed and enforced in order to improve credibility and public trust.

Appendix A: Acronyms

2T	tin, tantalum
3T	tin, tungsten, tantalum
3TG	tin, tungsten, tantalum, gold
3TG+C	tin, tungsten, tantalum, gold and cobalt
AGL	African Great Lakes (comprising Burundi, the Democratic Republic of the Congo, Kenya, Rwanda, Tanzania and Uganda)
AML	Anti-Money Laundering
ASM	Artisanal and Small-scale mining
BSP	Better Sourcing Program
CBP	Customs and Border Protection (U.S.)
CCCMC	Chinese Chamber of Commerce for Metals, Minerals & Chemicals
CFSP	Conflict Free Smelter Program
CFSI	Conflict Free Smelter Initiative (now RMI)
CMR	Conflict Minerals Report
CMRT	Conflict Minerals Reporting Template
CoC	Chain-of-Custody
COO	Country of Origin
DI	Development International
DMCC	Dubai Multi Commodities Centre
DPRK	Democratic People's Republic of Korea (North Korea)
DRC	Democratic Republic of the Congo
EICC	Electronic Industry Citizenship Coalition
EITI	Extractive Industries Transparency Initiative
FCPA	Foreign Corrupt Practices Act
GeSI	Global e-Sustainability Initiative
ICDX	Indonesian Commodity and Derivatives Exchange
ILO	International Labour Organization
IPIS	International Peace Information Service

ISAE	International Standard on Assurance Engagements
ITRI	International Tin Association Ltd. (new legal name)
iTSCi	ITRI Tin Supply Chain Initiative
KYC	Know Your Customer / Know Your Counterparty
LBMA	London Bullion Market Association
LME	London Metal Exchange
NA	Not Applicable
OECD	Organisation for Economic Cooperation and Development
OFAC	Office of Foreign Assets Control
PBOC	People's Bank of China
PWYP	Publish What You Pay
RCI	Responsible Cobalt Initiative
RGG	Responsible Gold Guidance
RJC	Responsible Jewellery Council
RMAP	Responsible Minerals Assurance Process (formerly CFSP)
RMI	Responsible Mineral Initiative (formerly CFSI)
RNC	Resettlement Negotiation Committee
SDN	Specially Designated Nationals
SEC	Security and Exchange Commission
SGE	Shanghai Gold Exchange
SORs	smelters or refiners
STP	Society for Threatened Peoples
UAE	United Arab Emirates
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSC	United Nations Security Council
USGS	United States Geological Survey
UWSA	United Wa State Army
WFCL	Worst Forms of Child Labor

Appendix B: Evaluation Instrument

<i>indicator</i>	<i>applicable standard(s)</i>	<i>mineral</i>	<i>verbatim</i>	<i>possible answers</i>
A. Supply Chain Due Diligence Policy				
1. Due diligence policy?	OECD RMAP RJC LBMA CCCMC DMCC	3TG+C	<p>“Set out the company’s supply chain due diligence policy...” (OECD pp. 52, pp.111)</p> <p>“the smelter will have a documented, effective, and communicated conflict mineral policy for procurement of tin/tantalum containing materials”⁴⁴ (CFSP pp.12)</p> <p>“Provision 10.1 requires all Entities to adopt a policy for the supply chain of Materials from Conflict-Affected Areas. The policy must be public (such as via a company website, or made available on request), and communicated to all suppliers of Materials, irrespective of CoC status.”⁴⁵ (RJC pp. 37)</p> <p>“Refiners should publicly report on their gold supply chain due diligence policies and practices”⁴⁶ (LBMA pp. 14)</p> <p>*policies must be available online (should be on company website, can be on RMI, LBMA, etc.)</p>	yes/no
2. Management structure described?	OECD RMAP DMCC	3TG+C	“explain the management structure responsible for the company’s due diligence” (OECD pp. 52, pp. 111)	yes/no
3. Designated responsible manager?	OECD RMAP DMCC	3TG+C	“who in the company is directly responsible” (OECD pp. 52, pp.111)	yes/no
4. Described internal systems of transparency, information collection, and control over the gold supply chain?	OECD DMCC	G	“describe the internal systems of transparency, information collection...over the gold supply chain from Step 1(C) and Step 3(B), explaining how this operates and how it has strengthened the company’s due diligence efforts in the reporting period covered” (OECD pp. 111)	yes/no/NA
5. Described control systems over mineral supply chain?	OECD RMAP	3T+C	“describe the control systems over the mineral supply chain put in place by the company” (OECD pp. 52)	yes/no/NA

6. Explained how control system operates and how it has strengthened due diligence?	OECD RMAP DMCC	3TG+C	“explaining how this operates and how it has strengthened the company’s due diligence efforts in the reporting period covered” (OECD pp. 111) “Explaining how this operates and what data it has yielded that has strengthened the company’s due diligence efforts in the reporting period covered” (OECD pp. 52)	yes/no
7. Record-keeping system described?	OECD RMAP DMCC	3TG+C	“describe the company’s database and record-keeping system” (OECD pp. 52, pp. 112)	yes/no
8. Explained methods for disclosing/identifying all suppliers?	OECD RMAP DMCC	3TG+C	“explain the methods for disclosing all suppliers, down to the mine of origin, to downstream actors” (OECD pp. 52) “explain the methods for identifying all suppliers, down to the mine of origin” (OECD pp. 112)	yes/no
9. Explained methods for sharing information throughout the supply chain	OECD DMCC	G	“...and the methods for sharing the information about due diligence throughout the supply chain” (OECD pp. 112)	yes/no/NA
10. Disclosed information on payments made to governments?	OECD RMAP DMCC	3TG+C	“disclose information on payments made to governments in line with EITI criteria and principles” (OECD pp. 52, pp. 112) * “not misrepresent” does not satisfy requirement	yes/no
11. Stated the SOR avoids minerals that directly or indirectly finance or benefit illegal armed group from conflict-affected regions?	RMAP	2T	“Key components of an acceptable policy are: a) Covers tin/tantalum materials as relevant to that smelter b) Covers the DRC and adjoining countries c) Is publicly communicated d) Is imbedded into the smelter’s standard operating procedures and relevant individuals will be trained e) Has an effective date established f) Is shared with suppliers.” (CFSP pp. 12-13)	yes/no/NA
12. Covered tin/tantalum materials?	RMAP	2T		yes/no/NA
13. Covered the DRC and adjoining countries?	RMAP	2T		yes/no/NA
14. Was part of the standard operating	RMAP	2T		yes/no/NA

procedures and training?				
15. Had an effective date for when it was established?	RMAP	2T		yes/no/NA
16. Was shared with suppliers (e.g. through contractual terms)?	RMAP	2T		yes/no/NA
17. Policy in English?	LBMA	G	"Refiners must also make their gold supply chain due diligence policies publicly available, in English, on their website" (LBMA Third Party Audit Guidance, 2017 pp. 33)	yes/no/NA
B. Company risk assessment in the supply chain				
18. Published risk assessment (3T) or risk reporting (G)?	OECD RMAP CCMC DMCC	3TG+C	"Publish the risk assessment with due regard taken of business confidentiality and other competitive concerns" (OECD pp. 52) ⁴⁷ "Report on steps taken to implement Step 2" ⁴⁸ (OECD pp. 111)	yes/no
19. Outlined methodology of risk assessment?	OECD RMAP CCMC DMCC	3TG+C	"Outline the methodology, practices and information yielded by the on-the-ground assessment" (OECD pp. 52, pp.112)	yes/no/NA
20. Explained methodology of risk assessment?	OECD RMAP CCMC	3T+C	"explain the methodology of company supply chain risk assessments" (OECD pp. 52)	yes/no/NA
21. Included whether and how company collaborated with upstream companies?	OECD CCCMC DMCC	G	"outline the methodology, practices and information yielded by the on-the-ground assessment team, including whether and how the company collaborated with other upstream companies, and how the company ensured that all joint work duly takes into consideration circumstances specific to the individual company; disclose the actual or potential risks identified" (OECD pp. 112)	yes/no/NA
22. Included how all joint work considered company specific circumstances ?	OECD CCCMC DMCC	G		yes/no/NA

23. Disclosed the actual or potential risks identified?	OECD CCCMC DMCC	G		yes/no/ NA
24. Explained how red flags were identified?	OECD CCCMC DMCC	G	“Included in such reporting, companies should explain how the company identified red flag operations or red flags in their supply chain, including the verifications of supplier representations proportional to risk; describe the red flags identified in the gold supply chain; describe the steps taken to map the factual circumstances of those red flag operations and red flagged supply chains” (OECD pp. 111-112)	yes/no/NA
25. Described the red flag suppliers identified?	OECD CCCMC DMCC	G		yes/no/NA
26. Described steps taken to map the red flag supplier operations?	OECD CCCMC DMCC	G		yes/no/NA
27. Described steps taken to manage risks?	OECD RMAP RJC CCCMC DMCC	3TG+C	“Describe the steps taken to manage risks” (OECD pp. 52, pp.112)	yes/no
28. Included summary of risk mitigation?	OECD RMAP RJC CCCMC DMCC	3TG+C	“including a summary report on the strategy for risk mitigation in the risk management plan” (OECD pp. 52, pp.112)	yes/no
29. Described training?	OECD RMAP RJC CCCMC DMCC	3TG+C	“and capability-training, if any” (OECD pp. 52, pp.112)	yes/ no
30. Involved affected stakeholders?	OECD RMAP RJC CCCMC DMCC	3TG+C	“...and the involvement of affected stakeholders.” (OECD pp. 52, pp.112)	yes/no
31. Disclosed efforts to monitor and track performance of risk mitigation?	OECD RMAP RJC CCCMC DMCC	3TG+C	“Disclose the efforts made by the company to monitor and track performance.” (OECD pp. 52, pp.112)	yes/no
32. Disclosed number of	OECD RMAP	G+C	“Disclose the number of instances where the company has decided to disengage with suppliers and/or supply chains, consistent with Annex II,	yes/no/NA

instances of disengagement with suppliers?	RJC CCCMC DMCC		without disclosing the identity of those suppliers, except where the company deems it acceptable to do so in accordance with applicable laws.” (OECD pp. 112)	
33. Grievance mechanism established, publicly available and documented?	RJC	G	“10.3 requires all Entities to establish a complaints or grievance mechanism to allow interested parties to voice concerns about circumstances in the supply chain involving Eligible and/or CoC Materials from Conflict-Affected Areas...The complaints mechanism should be documented and information about it should be publicly available, so that interested parties may be made aware that a formal mechanism is in place.” (pp. 38)	yes/no/NA
34. Grievance mechanism documentation described the type of complaints admissible and the procedures for investigating and addressing grievances?	RJC	G	“The complaints mechanism should be documented and information about it should be publicly available, so that interested parties may be made aware that a formal mechanism is in place. The document should describe the types of complaints that are admissible and are not admissible, and the procedures followed in investigating and addressing complaints concerning sourcing from Conflict-Affected Areas. For companies without a website or similar, and that are not consumer-facing, a contact point for the complaints mechanism could be included in CoC Transfer Documents or similar, to enable customers and suppliers to raise concerns. This would enable interested parties to access information about the complaints mechanism on request. Smaller businesses need only a simple procedure documented, and could use the Example Complaints Mechanism in Appendix 2 as a starting point.” (pp. 38)	yes/no/NA
C. Audits				
35. Published audit reports?	OECD RMAP LBMA DMCC	3TG+C	“Publish the audit reports of smelters/refiners with due regard taken of business confidentiality and other competitive concerns” (OECD pp. 53, pp.112) “Validate public disclosure as related to step 5 of the OECD Guidance” (CFSP Tin & Tantalum pp. 24)	yes/no/NA
36. Included refiner details and audit date?	OECD LBMA DMCC	G	“Audits: Publish the summary audit reports of refiners with due regard taken of business confidentiality and other competitive or security concerns. The summary audit report should include: a) Refiner details and the date of the audit;	yes/no/NA
37. Included description of	OECD LBMA	G		yes/no/NA

audit activities and methodology (when not otherwise described by an industry mechanism)?	DMCC		<p>b) The audit activities and methodology, as defined in Step 4(A)(4), where an Industry Programme or Institutionalised Mechanism in conformance with this Guidance and as defined in Step 4(B)(2) has not published these details;</p> <p>c) The audit conclusions, as defined in Step 4(A)(4), as they relate to each step in this Guidance”</p>	
38. Included audit conclusions as they relate to each of the 5 steps of the OECD guidance?	OECD LBMA DMCC	G	<p>(OECD pp.112)</p> <p>“the Refiner must publish the following information, in line with the requirements of the Gold Supplement to the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas:</p> <p>1) Refiner details and date of the audit; 2) Audit activities and methodology; 3) Audit conclusion for each step of the LBMA Responsible Gold Guidance.</p> <p>This information is included in the LBMA Summary Report (ISO 19011) or the Refiner’s Compliance Report (ISAE 3000).”</p> <p>(LBMA Third Party Audit Guidance 2017 pp. 33)</p>	yes/no/NA
39. Published LBMA Summary report annually?	LBMA DMCC	G	<p>“For third-party audits based on ISO 19011:2002, Refiners are not required to issue a Refiner Compliance Report. Refiners should therefore make available to the public their company policy regarding gold supply chain and the LBMA Summary Report.” (LBMA Gold Guidance 2015 pp. 14)</p>	yes/no/NA
40. Published a copy of the Assurance Report? (from auditor, published with compliance report)?	LBMA DMCC	G	<p>“For assurance engagements based on ISAE 3000, Refiners are required to compile a Refiner Compliance Report, including the following information:</p> <ul style="list-style-type: none"> · Name of refinery; · Time period of compliance; · Summary of activities undertaken during the period to demonstrate compliance; · Refiner’s level of compliance with each step of the LBMA Responsible Gold Guidance; · Management conclusion statement on compliance with the LBMA Responsible Gold Guidance. · Annex: List of countries of origin of mined gold for the reporting period 	yes/no/NA
41. Published Refiner Compliance Report (ISAE 3000 only)?	LBMA DMCC	G	<p>Refiners should make available to the public their company policy regarding gold supply chain, the Refiner’s Compliance Report with these guidelines together with the Assurance Report. Refiners are</p>	yes/no/NA
42. Compliance report	LBMA DMCC	G		yes/no/NA

includes: Name of refinery?			not required to disclose publicly the Annex of the compliance report disclosing the countries of origin of mined gold.”	
43. Compliance report includes: Time period of compliance?	LBMA DMCC	G	(LBMA Gold Guidance 2015 pp. 14)	yes/no/NA
44. Compliance report includes: Summary of activities undertaken during the period to demonstrate compliance?	LBMA DMCC	G		yes/no/NA
45. Compliance report includes: Level of compliance with each step of the LBMA Responsible Gold Guidance?	LBMA DMCC	G		yes/no/NA
46. Compliance report includes: Management conclusion - statement on compliance with the LBMA Responsible Gold Guidance?	LBMA DMCC	G		yes/no/NA

Endnotes

¹ OECD (2016), OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, Third Edition, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264252479-en>

² OECD (2016), page 4: "This third edition of the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas provides clarification on the scope of the Guidance by removing language in the Introduction that was perceived to limit its application only to the supply chains of tin, tantalum, tungsten and gold. The updated edition now clarifies that the Guidance provides a framework for detailed due diligence as a basis for responsible supply chain management of all minerals."

³ For the purposes of this study, the relevant Gold guidance starts on page 111. For 3T, the section "A.1. SPECIFIC RECOMMENDATIONS – for all upstream companies" starting on page 52 applies. SORs are included in the OECD's definition of upstream: "For the purposes of this Supplement, "upstream" means the mineral supply chain from the mine to smelters/refiners. "Upstream companies" include miners (artisanal and small-scale or large-scale producers), local traders or exporters from the country of mineral origin, international concentrate traders, mineral re-processors and smelters/refiners."

⁴ Hannah Koep-Andrieu, Andrew Britton (2017), *Alignment Assessment of industry programmes against the OECD Due Diligence Guidance*, presented in Paris at the OECD, May 2017

⁵ "Smelters and refiners on the Active list are participants in the RMAP and have committed to undergo an audit or are participating in one of the cross-recognized certification programs: LBMA Responsible Gold Certification or Responsible Jewelry Program Chain-of-Custody Certification. Smelters and refiners are identified as Active in the Responsible Minerals Assurance Process once they submit signed Agreement for the Exchange of Confidential Information (AECI), Auditee Agreement, and have submitted a Due Diligence Checklist. This is the first step of the audit process." RMI, *Active Smelters & Refiners*, accessed February 10, 2018,

<http://www.responsiblemineralsinitiative.org/active-smelters-refiners/>

⁶ RMI, *RMAP Conformant Smelters & Refiners*, accessed February 10, 2018,

<http://www.responsiblemineralsinitiative.org/conformant-smelter-refiner-lists/>

⁷ Ibid.

⁸ RMI (2013a), *Conflict-Free Smelter Program (CFSP) Supply Chain Transparency Smelter Audit Protocol for Tin and Tantalum*, November 21, 2013,

http://www.responsiblemineralsinitiative.org/media/docs/CFSI_CFSP_AuditProtocol_SnTa_ENG.pdf

⁹ RMI (2013b), *Conflict-Free Smelter Program (CFSP) Supply Chain Transparency Smelter Audit Procedure for Tungsten*, November 19, 2013,

http://www.responsiblemineralsinitiative.org/media/docs/CFSI_CFSP_AuditProtocol_W_ENG.pdf

¹⁰ "The Auditor will confirm that the smelter will have a documented, effective, and communicated conflict mineral policy for procurement of tin/tantalum containing materials. The policy will explicitly state that the smelter avoids minerals that directly or indirectly finance or benefit illegal armed groups from conflict-affected regions. Key components of an acceptable policy are:

- a) Covers tin/tantalum materials as relevant to that smelter
- b) Covers the DRC and adjoining countries
- c) Is publicly communicated
- d) Is imbedded into the smelter's standard operating procedures and relevant individuals will be trained
- e) Has an effective date established
- f) Is shared with suppliers."

See: RMI (2013a), op. cit.

¹¹ LBMA (2018), *Refiners Search*, accessed January 20, 2018, <http://www.lbma.org.uk/refiners-gold-current>

¹² LBMA (2017), *A guide to The London Bullion Market Association*, May 2017,

http://www.lbma.org.uk/assets/downloads/presspack/LBMA_Overview_Brochure.pdf

¹³ According to its overview brochure, the RGG "is based on the OECD Due Diligence Guidance issued in December 2010 as well as Swiss and US KYC, Anti-Money Laundering and Combating Terrorist Financing regulations. The structure of the Guidance combines and expands leading refiners

existing AML, KYC and security policies, management systems and audit processes to include risk-based due diligence in order to avoid contribution to conflict.” “The RGG became a formal requirement of Good Delivery for all LBMA accredited gold refiners in January 2012. Since then, all 71 gold refiners have completed their independent third party audit with no instances of zero-tolerance non-compliances.” See: LBMA (2017), op. cit.

¹⁴ LBMA, *Responsible Gold Guidance*, version 6, August, 14, 2015, <http://www.lbma.org.uk/assets/market/gdl/RGG%20v6.0%20201508014.pdf>

¹⁵ LBMA, *Responsible Gold Guidance*, version 7, September 2017, http://www.lbma.org.uk/assets/downloads/responsible%20sourcing/Responsible_Gold_Guidance_v7.pdf

¹⁶ “All refiners undergoing an independent audit from 1 January 2017 were required to list the Country of Origin information for material that they processed in the reporting period. As audits are performed retrospectively, this could have gone as far back as 1 January 2016. As this information is commercially sensitive, LBMA does not release details about specific supply chains.” Correspondence with LBMA Compliance Officer Simon Houghton-Dodd, February 12, 2018.

¹⁷ The Responsible Jewellery Council (2012), *Chain-of-Custody (CoC) Standard*, March 2012, https://www.responsiblejewellery.com/files/S002_2012_RJC_CoC_Standard_PM.pdf

¹⁸ For a list of RJC members see: <https://www.responsiblejewellery.com/members/>, and for a list of RJC CoC Certified entities see: <https://www.responsiblejewellery.com/members/chain-of-custody-certified-entities/>

¹⁹ See page 10, III. Scope of Application, *Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains*, <http://www.cccmc.org.cn/docs/2016-05/20160503161408153738.pdf>

²⁰ Page 31 of the CCCMC states: “7.5 Report on process and results of supply chain risk management. Companies should publicly report on their supply chain due diligence policies and practices, including on identified risks and steps taken to mitigate these risks, and may do so by expanding the scope of their sustainability, corporate social responsibility or annual reports to cover additional information on mineral resource supply chain due diligence.”

²¹ Susan Zou (2017), *CCCMC’s Responsible Cobalt Initiative to register as legal entity*, Shanghai, December 1, 2017, <https://www.metalbulletin.com/Article/3771508/Titanium/CCCMCs-Responsible-Cobalt-Initiative-to-register-as-legal-entity.html>

²² Responsible Cobalt Initiative (RCI), November 14, 2016, <http://www.cccmc.org.cn/docs/2016-11/20161121141502674021.pdf>

²³ Ibid.

²⁴ Apple Inc. e.g. reports it exercises the same amount of due diligence with cobalt as it does with 3TG, that 100% of its cobalt smelter/refiner partners are now participating in independent third party audits, and also makes public its cobalt smelters. See: Apple (2016), *Smelter and Refiner List*, December 2016, <https://images.apple.com/supplier-responsibility/pdf/Apple-Smelter-and-Refiner-List.pdf>

²⁵ DMCC, *DMCC Rules for Risk Based Due Diligence in the Gold and Precious Metals Supply Chain*, Version 1.1 / 2017, https://www.dmcc.ae/application/files/1815/1254/6498/DMCC_Rules_RBD_GPM_-_CL_-_27_Nov_2017.pdf

²⁶ DMCC, *DMCC Good Delivery List*, October 2016, https://www.dmcc.ae/application/files/2114/9138/7908/DGD_List_Gold_Alphabetical_-_October_2016-Final.pdf

²⁷ Page 30: “Rule 5.1 Overriding Principle

Each Accredited Member is required to publicly report annually on its supply chain due diligence in compliance with Step 5 of the OECD Guidance, in order to generate public confidence in the measures that it has implemented.

Rule 5.2 Minimum Requirements of Public Reporting

At minimum, each Accredited Member shall:

- a) Publicly acknowledge the requirements under these Rules;
- b) Comply with Rule 4.6”

Page 28: “Rule 4.6: Annual Report on Supply Chain Due Diligence: Each Accredited Member shall produce an annual report. This shall include a summary of the Review in accordance with Step 5 of

the OECD Guidance and Sections 16 and Sections 19 (as applicable) of the DMCC Review Protocol (Annex 3)."

²⁸ TI-CMC (2016), *Tungsten Industry - Conflict Mineral Council Framework*, March 2016, http://www.ti-cmc.org/ti-cmc_framework.pdf

²⁹ TI-CMC, *TI-CMC Member Companies*, accessed January 30, 2018, http://www.ti-cmc.org/memb_list.asp

³⁰ Christopher Clemence (2017), *Will the 140-year old London Metal Exchange survive the 21st century?*, August 7, 2017, <https://aluminiuminsider.com/will-140-year-old-london-metal-exchange-survive-21st-century/>

³¹ LME *List of LME-approved brands by metal*, accessed February 18, 2018, <https://www.lme.com/-/media/Files/Branding/Approved-brands/LME-Approved-Brands.xls>

³² SGE, *Guide of Shanghai Gold Exchange*, accessed January 20, 2018, <http://www.en.sge.com.cn/upload/file/201703/23/8KfmWv2oWNyc1qRG.pdf>

³³ SGE, *List of Members (Main Board)*, accessed February 18, 2018, http://www.en.sge.com.cn/membership_ListOfMembers_MainBoard

³⁴ SGE *List of Members (International Board)*, accessed February 18, 2018, http://www.en.sge.com.cn/membership_ListofMembers_internationalboard

³⁵ ICDX (2018), *Welcome to Indonesia Commodity & Derivatives Exchange (ICDX)*, accessed January 20, 2018, <http://www.icdx.co.id/>

³⁶ ITRI Ltd. is now the "International Tin Association Ltd."

³⁷ For a list of its members, see: <https://www.itri.co.uk/information/itsci/membership-information/list-of-current-itsci-full-members-latest-file-update>

³⁸ RMI, *RMAP Conformant Smelters & Refiners*, accessed February 10, 2018, <http://www.responsiblemineralsinitiative.org/conformant-smelter-refiner-lists/>

³⁹ e.g. ABC Refinery (Australia) Pty Ltd.

⁴⁰ LBMA (2018), *Refiners Search*, accessed January 20, 2018, <http://www.lbma.org.uk/refiners-gold-current>

⁴¹ Research and Markets (2017), *Global and China Cobalt Industry Report, 2017-2021*, April 2017, https://www.researchandmarkets.com/research/ngrctv/global_and_china

⁴² London Metal Exchange (2018), *Approved Cobalt Brands*, accessed January 20, 2018, <https://www.lme.com/Metals/Minor-metals/Cobalt/Approved-brands>

⁴³ LBMA (2018), op. cit.

⁴⁴ RMI (2013a), op cit.

⁴⁵ Responsible Jewellery Council (2012), *Chain-of-Custody Standards Guidance*, March 2012, https://www.responsiblejewellery.com/files/G004_2012_RJC_CoC_Standards_Guidance_PM.pdf

⁴⁶ LBMA Responsible Gold Guidance, Version 6, 2015, <http://www.lbma.org.uk/assets/market/gdl/RGG%20v6.0%20201508014.pdf> (effective January 1, 2016). The authors could not find substantive changes to public disclosure requirements in Version 7 (effective January 1, 2018) as compared with Version 6. http://www.lbma.org.uk/assets/downloads/responsible%20sourcing/Responsible_Gold_Guidance_V7.pdf

⁴⁷ "Business confidentiality and other competitive concerns means price information and supplier relationships without prejudice to subsequent evolving interpretation. All information will be disclosed to any institutionalised mechanism, regional or global, once in place with the mandate to collect and process information on minerals from conflict-affected and high-risk areas." (pp. 52)

⁴⁸ Step 2: Identify and assess risk in the supply chain (OECD)