

Trust Me If You Can: Voluntary Sustainability Programs in the Uranium Industry

Written by Marlene Terstiege

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MARLENE TERSTIEGE, APR 18 2020

CHAPTER ONE: INTRODUCTION

In 2018, the European Commission stated that the EU aims to be generating 95% of its electricity supply from low-carbon energy sources by 2050 (European Commission, 2018). Of these 95%, a share of 15% is supposed to be derived from nuclear energy (European Commission, 2018). It is generally emphasized that nuclear energy offers a number of benefits, which could enhance the speed of our low-carbon transition (UNECE, 2018; World Nuclear Association, 2019b).[1] But nuclear energy will only be considered as a serious alternative for achieving greener electricity, be it in the EU, in South-East Asia or in other parts of the world (Schneider & Froggatt, 2019), if the ways to get the commodities which fuel the power plants, are sustainable and economically viable as well (International Atomic Energy Agency, 2019).

The number one resource for the generation of nuclear fuel is uranium, a heavy metal that can be found mostly in stone and which has to be milled in order to get uranium ore concentrate (UOC), commonly known as yellowcake (OECD, 2018). Raw uranium is extracted through mining; which is not only an environmentally damaging activity but also a high-risk working place for employees in mines around the world (World Nuclear Association, 2019c). Harmful consequences of uranium mining include the contamination of groundwater, the exposure of workers to radiation as well as the destruction of the earth's surface and soil through careless amassing of radioactive "waste rock piles" (OECD, 2014, p. 55).

Global Uranium Trade

Around a quarter of the world's uranium resources exist on the African continent, while other countries like Canada, Brazil, Kazakhstan, Russia, China and Australia make up together 70% of land where uranium can be extracted (OECD, 2018). Major natural uranium stocks are available in developing countries like Tanzania, Namibia, Malawi and Niger (OECD, 2018). These and other commodity rich nations often suffer from what has been termed the 'resource curse', meaning that there is a discrepancy between on the one hand, the employment opportunities and prospects for economic development that mining companies or other investors bring, and on the other hand, the observed deficiency of less-developed countries to establish good governance structures – the prerequisite for more sustainability in global trade (Dasnois, 2012; Hopwood, 2013; McFerson, 2010). This latter point is alarming as it puts those countries into the contradictory situation where "great mineral wealth [is] existing side by side with pervasive poverty" (Hopwood, 2013, p. 17). Therefore, careless uranium mining threatens the planet and human rights.

Research Aim of this Paper

Of course, uranium mining is just one sector out of many industries that produce their goods outside of their domestic branch in rather weak economies and then sell them somewhere far away in other countries (World Trade Organization, 2019).[2] In order to attenuate the downside of such highly globalized trade – extensive pollution from transport routes, environmental degradation due to the need for raw material and the exploitation of workers in low-

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income regions – various eco-labels have emerged to make consumers aware of the environmental and social footprint their purchases leave (Abbott & Snidal, 2009b; Roger & Dauvergne, 2016).

Society's awareness of 'greenwashing', a term for businesses' marketing strategy of pretending to produce in a sustainable way even though in reality they do not (Dahl, 2010) has grown, and it is increasingly difficult to differentiate between reliable certification program and those, which "are biased, arbitrary, weak, or nakedly politicized" (van der Ven, 2019, p. 2). In the academic literature different ways of how such labels can contribute to boosting their image as a credible certifier were recognized. Among them are for, example, the stringency of their guidelines or the degree to which they inform the public about internal matters (Hale, 2008; van der Ven, 2015). Considering these outlined aspects, this paper aims to answer the following question: How credible are voluntary sustainability programs (VSPs) in the uranium mining industry? And by what means do they gain or lose credibility?

To the best of the author's knowledge, an analysis of different VSPs that are actively engaged in regulating uranium mining in various countries has not been undertaken yet. As this knowledge might be an important component for assessing the future of nuclear energy, this paper will undertake a first attempt at closing this gap.[3]

CHAPTER TWO: TRANSNATIONAL GOVERNANCE OF SOCIAL AND ENVIRONMENTAL SUSTAINABILITY

Globalization and (Supply Chain) Responsibility

The Role of Private Actors

Over three decades ago, social scientists observed the alteration of the market – in particular due to the capitalist ambition to reduce trading costs as much as possible by producing cheaper in other geographical areas –, which led to an "integration of different countries and regions into a global economy" (Hale & Held, 2011; Robinson, 2001, p. 159). This new phenomenon was called 'globalization'. With it came the rise of until then unknown questions concerning the role of nation states within a system that is now characterized by transnational dynamics (Hale & Held, 2011). Given that anarchy and high interdependence are conditions of the global system at the same time, and that domestic authorities have no right to interfere in another sovereign nation's trade policies, the design of new control mechanisms had to be fundamentally different than usual state-based rule-making (Abbott & Snidal, 2009b).

Since individuals running their own business by making and trading certain goods are the actors who are the closest to the developments happening in the context of the production and consumption of goods, scholars judge their role in establishing regulatory frameworks to enhance sustainability and solving societal challenges of our time as important, if not necessary (Abbott & Snidal, 2009b).

Club-Theory in Transnational Governance

The usual approach of controlling business behavior via legislative regulations was quickly assessed as being prone to failure for two reasons. On the one hand, unstable or malfunctioning governments, particularly in developing countries, do often not have enough power or resources to impose strict controls and penalize unlawful behavior (Prakash & Potoski, 2007). On the other hand, since sustainability regulations aim at improving the value of public goods, such as the air quality or universal labor and human rights, collective action problems occur (Prakash & Potoski, 2007; Roger & Dauvergne, 2016). These are situations in which profit-driven market participants refuse to act in a way that benefits the whole society because they have higher expenses for producing sustainably, by either paying a higher wage or growing their plant-based ingredients with organic fertilizer instead of cheap pesticides, which increases the public's assets while decreasing their own profit (Prakash & Potoski, 2007).

To solve such types of dilemmas associated with legal rules, Prakash and Potoski developed the theory of regulatory schemes as "voluntary clubs" (2007, p. 773). They assumed that MNCs, which are highly involved in global trade and thus contributing a lot to the environmental harm done, will have a higher self-motivation to actively engage in sustainable practices as best as they can if such behavior gives them access to a certain club (Prakash & Potoski,

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2007). Being inside this club enables them to reap special fruits, which would otherwise be unavailable for them, such as an improved firm image or the potential expansion of their market and profits due to an additional type of eco-conscious consumer demand, for example (Prakash & Potoski, 2007). Depending on how strictly a club, the VSP, imposes monitoring on its members, a company should theoretically be less enticed to engage in greenwashing as this could lead to expulsion from the club and humiliation of its corporate reputation (Prakash & Potoski, 2007).

Hence, voluntary regulatory frameworks guided by the authority of private actors like MNCs, NGOs or even citizens evolved as “important policy instruments for environmental governance” (Prakash & Potoski, 2007, p. 773).

Types of Voluntary Sustainability Programs

Over the course of the last decade, several different types of such VSPs have been developed (Roger & Dauvergne, 2016). Among them are multi-stakeholder initiatives (MSIs), public-private partnerships (PPPs), corporate social responsibility (CSR) and since some years local or Southern sustainability standards (S³). While they have the general objective of strengthening sustainable practices in different sectors and along global supply chains on the basis of voluntary participation, there are differences in the actors they are composed of and the ways they function.

MSIs are endeavors of joint groups consisting of various actors collaborating on one topic, most times NGOs and firms, yet public institutions can be involved as well (Fransen & Kolk, 2007). Their particular feature is the promise to fully represent all people along the manufacturing process or provision of a certain good, meaning also the commodity farmers in foreign producer countries, by letting them take part in the process of suggesting rules and formulating standards (Cheyns, 2011; Cheyns & Riisgaard, 2014). Prominent examples of such MSIs are the ‘Roundtable on Sustainable Palm Oil (RSPO)’ or the ‘Marine Stewardship Council (MSC)’ (Ponte & Cheyns, 2013). While MSIs can but do not have to be composed of government officials, PPPs always involve a public agency (Börzel & Risse, 2005). PPPs are able to channel and maximize the knowledge, financial means, R&D and domestic or international sphere of influence of both market players and national policymakers to tackle, regulate and improve a certain issue of public concern, such as the ‘Global Fund to fight AIDS, Tuberculosis and Malaria’ for example (Ruckert & Labonté, 2014; The Global Fund, 2020).

Adopting measures of Corporate Social Responsibility (CSR) became a popular approach “to a more humane, more ethical, more transparent way of doing business” (van Marrewijk, 2003, p. 95). By now, there is a broad literature on this subject and many different theoretical perspectives on the goals and effects of CSR measures have evolved (for an overview see Frynas & Yamahaki, 2016). It was found that the main reasons for a company to develop and implement CSR guidelines are related to the potential for an enhanced image due to compliance with sustainability standards, ethical norms and social values, an increase in revenue or shareholder value as well as the firm’s situation of dependence on certain material or human resources, thus having to contribute to environmental protection for the sake of society but also for its own survival (Frynas & Yamahaki, 2016; Garriga & Melé, 2004; van Marrewijk, 2003).

With regard to CSR, a major global initiative has been established, called the ‘UN Global Compact’. It supports companies around the world in their endeavor to carry out activities to improve their profile in the four issue areas of corruption, labor conditions, human rights and environmental protection (UN Global Compact, n.d.). As of 2019, around 80-90% of the 1,584 businesses participating in the annual survey stated to actively engage in the realization of the SDGs and the UN Global Compact’s ten principles for sustainable and responsible business practice (UN Global Compact, 2019). But given that the number of corporate policies in place for the above mentioned four issue areas has declined since 2015, and taking into account that not only 1,584 but over 9,500 firms in more than 160 countries do take part in this CSR initiative, some food for critical thought remains and it seems rather uncertain how common responsible business behavior truly is (UN Global Compact, 2019).

Many of the VSPs designed predominantly by stakeholders from the North are perceived as illegitimate by countries in the Global South because small and local producers are often excluded from decision-making processes and unable to adhere to the ambitious standards set out by distant companies (Schouten & Bitzer, 2015). As a countertrend to the Northern VSPs emerged thus domestic certification schemes and S³ like the Brazilian ‘Certifica Minas Café’ or the ‘Indonesian Sustainable Palm Oil’ (Langford, 2019; Sun & van der Ven, 2020). Yet, the inherent

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weakness of such national initiatives is their lack of external legitimacy, meaning that a purposeful isolation from the North is counterproductive to their desire of becoming developed countries and leaders in global trade (Schouten & Bitzer, 2015).

What these different types of VSPs have in common is their “anticipated benefits of private authority” (Roger & Dauvergne, 2016, p. 422) such as the elimination of a firm’s costs from adjusting its product for each and every country’s national regulations, or the enhancement of its image as a responsible actor on the global level (Roger & Dauvergne, 2016). Nevertheless, as the next subchapter will illustrate, the purely voluntary commitment required from firms had some scholars questioning VSPs efficiency and developing more critical stances (Weiss, Seyle, & Coolidge, 2013).

The Credibility of VSPs

In general, it was criticized that VSPs suffer from a principal-agent-problem or ‘democracy deficit’, meaning that aspects of liberal decision-making related to questions of public concern, like the environment or human rights, are missing – most notably the opportunity to hold companies (as agents) accountable through elections (shareholders and citizens as principals) and the equal consideration of all voters’ say through fair representation (Abbott & Snidal, 2009a; Schleifer, Fiorini, & Auld, 2019). Therefore, as Bartley aptly put it, any attempt to govern “[t]ransnational private regulation through certification is a compromised outcome” (2007, p. 300). In this subchapter some countermeasures of how VSPs can build trust between them, their shareholders and the public will be explained.

Accountability – Transparency

The lack of globally applied enforcement and control of standards is a major shortcoming of VSPs (Hale & Held, 2011). If MNCs do not have to fear a penalty for their non-compliance with certain regulations, how can transnational governance schemes even achieve what they were set out to do? What can be done to hold firms liable for their wrongdoings? One factor that is believed to have the capability of asserting accountability is transparency (Hale, 2008). Some authors have dedicated their research on this topic and made some important remarks.

Gupta (2008) defined the active choice to reveal internal information, like descriptions of the participating firms’ manufacturing process, numbers concerning their annually produced emissions or the salaries they paid, for example, as one relevant step towards being an honest institution in the transnational governance system. Being not transparent at all can trigger criticism of outside actors, which might lead to a damaging effect on the VSP’s image due to its opaqueness and thus creates a loss of confidence in its certification label (Dingwerth & Pattberg, 2009; Gupta, 2008). Theoretically, both positive and negative headlines resulting from transparent reporting alter the VSP’s public reputation or trust and should thus be an incentive for a VSP to enforce its standards as best as it can (Auld & Gulbrandsen, 2010; Hale, 2008).

Schleifer, Fiorini and Auld (2019) conducted a quantitative analysis of VSPs and their transparency level, the majority of the cases in their study was transparent on a superficial level only, and revealing most times information about the way their standards are being set instead of letting the public know how their auditing processes take place, what has been talked about in meetings of the highest decision-making bodies or how conflicts between VSP participants are resolved (Schleifer et al., 2019).

These above-mentioned assumptions of why the revelation of intra-VSP information matters show that transparency is held as a key variable to solve the enforcement-puzzle. Yet we seem to be witnessing it on critically low levels.

Legitimacy – Inclusion

As stated before, another dimension along which critics have voiced their concerns, is in how far the internal structure of VSPs leverage the fair participation of all sides involved – especially the workers in producer countries (Cheyns, 2011). The input of local farmers in the process of setting a standard is vital for the overall success of a VSP.

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Oftentimes tensions exist inside MSIs' decision-making bodies between the representatives of MNCs and those of local producer networks (Cheyns, 2011; Ponte & Cheyns, 2013). While corporations emphasize and push through their international expertise and insights into the mostly Northern-shaped consumer markets for the construction of regulatory framework, producers express their respective expertise about the cultural, geographical and logistical conditions on-site, which is highly relevant as they are the ones who have to implement standards into their daily work process and can thus judge the feasibility of special rules better (Cheyns, 2011; Ponte & Cheyns, 2013).

Mena and Palazzo (2012) think the full acknowledgment of all local actors' opinions is a necessary variable for MSIs to be generally "perceived as justified" (2012, p. 528). VSPs can do so to varying degrees, for example by allocating seats for producers in their highest decision-making organs or even giving them a right to veto certain decisions (Bennett, 2016). Thus, if local smallholders get excluded, VSPs are prone to failure due to potential non-feasibility of Northern-generated overambitious standards and diminishing public support. In response to exclusion and perceived illegitimacy we witness the creation of alternative sustainability forums, notably in the Global South, where actors rethink their participation in Northern-designed VSPs and establish S³s as outlined in annex 1 (Smith & Fischlein, 2010).

Unfortunately, as Bennett (2017) found in her study, out of 33 different organizations that aim at improving particularly the social aspects of sustainable production, only a little more than a third of them do fulfill the most optimistic assumption of simply reserving them a place at the table. Even though her study is nearly three years old and despite the sole focus on 'socially-oriented' VSPs, this result illustrates a worrisome truth.

Compliance – Rigor

With the theoretical importance of transparency and inclusion on the one hand, and the empirical failure of VSPs to fulfill both conditions on the other hand, the "credibility of such schemes remains uneven", wrote van der Ven in 2015 (p. 276). His comprehensive framework for assessing the overall credibility and legitimacy of VSPs laid out ten different factors, which taken together form an 'index of best practice' (van der Ven, 2015). The concept of rigor, which he defined as having "a well-documented system of remediation and sanctions if compliance with its standards is not maintained," was described by van der Ven as having special relevance for the uranium sector as misconduct in this industry can be very damaging (van der Ven, 2015, p. 279). Similar to what was termed 'stringency', this paper perceives of a standard's rigor in terms of the reporting obligations and monitoring processes that are in place, who is undertaking auditing processes (Prakash & Potoski, 2007; Schleifer et al., 2019).

All theoretical assumptions in a) – c) were put into an analytical framework (see figure 1 below) in order to systematically investigate the three chosen cases' credibility. The more evidence is found for each category the stronger a VSP can be interpreted as relatively credible.

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Comparative Case Study

To answer the outlined research question a comparative case study will be conducted (Kaarbo & Beasley, 1999). The focus lies on the specific phenomenon of VSP's credibility, the dependent variable in this paper. The explanatory variables were specified as accountability, legitimacy and compliance. In order to see whether the range of explanatory variables for credibility "hold[s] across different subgroups of a population" (Kaarbo & Beasley, 1999, p. 382) three different cases of uranium mining VSPs were chosen. The population clearly is the number of existing uranium VSPs, and subgroups could be MSIs, PPPs, S³s or CSR/industry-led measures. After some exploratory research the following cases were found to be suitable.

The first case chosen is the *Uranium Stewardship*, a program initiated during 2008-2009 by the World Nuclear Association (US-WNA) (Roche, 2009). US-WNA is an industry-led type of governance scheme and associated more with CSR (World Nuclear Association, 2010, 2020). The second case to be investigated is the MSI *Extractive Industries Transparency Initiative* (EITI) (EITI, 2019c, ll. 2-3). An S3, namely the *Namibian Uranium Association* (NUA), is the final case study. To explore the three cases a document analysis was carried out. The results were gathered by examining the online available material on all three cases' websites and where applicable from other secondary sources. The documents included frequently statutes, charters, fact sheets, and reports.

CHAPTER FOUR: FINDINGS

Uranium Stewardship

Accountability – Transparency

The US-WNA has no extra VSP-specific website, which makes it complicated to explore the transparency of US-WNA as a voluntary standard itself. But information can be found across the WNA homepage and via nuclear energy corporations' statements, if they participate in the US-WNA.

According to its creator WNA, the US-WNA is established as a program of action (World Nuclear Association, 2010). Regarding the information they disclose on how their standard was set, it was stated that on the one hand that the inspiration for the wording of the ten principles of how to promote and foster uranium stewardship was found in the WNA's ethical charter (World Nuclear Association, 2010). On the other hand, a 'WNA Uranium Stewardship Working Group' was set up, which developed the general program of US-WNA with around 90 people, who work at any stage of the uranium value, together with IAEA officials observing their work (Roche, 2009).

According to what was communicated at a conference in Vienna in June 2009, the working group's members came from every continent and the majority of states was involved through deputy spokespersons (Roche, 2009). Furthermore, stakeholders such as the Clean Energy Council or the Australian National University among others, were consulted in fall 2008 and spring 2009 (Roche, 2009). The information disclosure of how the US-WNA principles were set is relatively deep. Nonetheless, further details on which exact countries were represented or what different stakeholders' views upon the ten principles were could not be discovered.

Even though the official WNA policy document stated that ten of WNA's members are responsible for over 90% of the global uranium production (World Nuclear Association, 2010), only one single firm – Uranium One – referred to the US-WNA in its CSR section on its website. Others had sustainability reports in place but were not directly terming the WNA and its uranium stewardship initiative.[4]

Furthermore, Vattenfall writes that "[a]n audit checklist for joint audits of mines supports the policy document" (Vattenfall, n.d., l. 12). However, when trying to gather information or even find a report of an US-WNA auditing process, nothing substantive could be found, apart from one single line in Roche's presentation from 2009 saying that WNA members should "commission regular independent audits to assess and verify compliance and identify opportunities for improvement, even beyond regulations" (Roche, 2009, sec. 7). As example auditors he named IAEA, the World Association of Nuclear Operators, FTSE Russell but also voluntary reports (Roche, 2009).

In line with Schleifer et al.'s (2019) findings, the US-WNA program is transparent but on a superficial level only. Nothing was found which could have told us anything more explicit concerning how the US-WNA is verified or how

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maybe updates concerning the ten principles – if there were any – would be decided upon.

Legitimacy – Inclusion

As it was noted above, there have been no real updates on the US-WNA since it was established around 2008/2009. As the transparency-analysis just pointed out, during the drafting of the uranium stewardship principles, “most countries (with interest in uranium) [were] represented” (Roche, 2009, sec. 4). Yet, names of countries or a protocol stating which persons were representing them, could not be found.

In addition, a look at the WNA’s governance structures indicated that among the board members are only representatives of firms that supply nuclear fuels, generate it or are generally active in the nuclear sector (World Nuclear Association, 2019a). No single sentence was related to the potential representation of local mine employees or the like. It seems the WNA strives rather for external legitimacy (Bennett, 2016).

This makes the US-WNA appear in a rather gloomy light because as the transparency evaluation has shown, the most important uranium MNCs do not seem to work with this specific program of action extensively (at least according to what was stated on the websites), which makes the external legitimacy rather inconsistent. Internal legitimacy of this VSP is not given at all since the local mine employees who are most affected by changes (not) undertaken in terms of regulating mine working conditions are not addressed at all.

Compliance – Rigor

The US-WNA wants to reach the point where all nuclear industry firms voluntarily commit themselves as best as they can “to ensure that uranium and its by-products are managed in ways that are safe, environmentally responsible, and economically and socially acceptable” (Roche, 2009, sec. 5). As briefly mentioned before, nothing could be found about the way WNA intends to monitor the compliance with the ten principles. As it refers both to the ICMM and the IAEA, one gets the idea the US-WNA is simply a reiteration of standards that should be adhered to by the nuclear industry and not a very important uranium-only VSP. It is difficult to talk of ‘rigor’ at this point, but if it had to be evaluated, then the US-WNA is very weak with regard to guaranteeing compliance and mentions nothing about sanctions or any sorts of consequences if those stewardship guidelines are disregarded.

EITI

Accountability – Transparency

The name of this VSP– Extractive Industries Transparency Initiative –suggests comprehensive and deep transparency. And truly, the wealth of accessible documentation on EITI’s website is remarkable.

EITI’s mission is to “build[s] trust between governments, companies and civil society” (EITI, 2019c, para. 3). To do so it has developed a standard that encourages MNCs and firms in the extractive sector to govern their business practices to retrieve minerals, oil and gas in a thorough manner (EITI, 2019c). Whereas six out of the ten principles EITI defined deal with the questions concerning the implementation of its standard, the seventh to tenth principle relate to EITI’s decision-making and governance structures (EITI, 2019b). Back in 2002, when the EITI was established, various groups took part in drafting the standard. Among them were MNCs, smaller firms, civil society representatives and government officials (EITI, 2019d).

Furthermore, EITI’s board and member meetings minutes are available and everyone can get insights about when both groups met and which topics were on the agenda as well as other information such as the names of all the people who are nominated newly for a board position for example (EITI, 2019e, 2019a, 2019f). A big plus in terms of expanding the transparency is the publication of any sort of board decision made (EITI, 2019h).

Even if there are conflicts between the EITI board and a country, information can be found on its website. A rather

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recent example, and important one since it featured the uranium industry, was the report about a disagreement between Niger and EITI (EITI, 2018). After inadequate progress made, Niger was temporarily suspended, which the government of Niger took as an impetus to leave the EITI Standard (EITI, 2018). However, in a meeting in early 2018, discussions were relaunched in which Niger considered cancelling its withdrawal and rejoining (EITI, 2018).

Overall, it can be said that EITI lives up to its name with regards to being accountable in all aspects possible. EITI fulfills all of Schleifer et al.'s (2019) requirements to being identified as a VSP that practices deep transparency.

Legitimacy – Inclusion

As EITI is a VSP in the form of an MSI it should have a quite diverse range of people in its highest organs and decision-making bodies. Reading through the list of its board members gives a promising impression of EITI's inclusion strategy. There are people on the board who represent different geographical areas rather than MNCs, such as Eurasia, South-East Asia, Anglophone Africa and Francophone West Africa, Francophone Central Africa, Latin America and the Caribbean (EITI, 2020).

Clearly, it will be difficult for one representative to speak adequately for each single country that her or his position of regional spokesperson is made for, but EITI has so called 'national multi-stakeholder groups' in place, which take care of the implementation of the EITI standard in their respective country and adapt it where necessary (EITI, n.d., 2019b). EITI has thus both strong internal and external legitimacy through its governance structures.

Compliance – Rigor

To be able to be considered as 'having improved' in its extraction-governance in the annual EITI progress report EITI set out seven different requirements that the participating countries have to execute and obey to. For example, requirement three asks countries to fully disclose figures and facts about its exploration and production of any type of resources it naturally has, or requirement five and six obligate the countries to publish information on how and from what state revenues are generated and for whom and which societal or environmental reasons it is spent (EITI, 2019b). These requirements are very precise and easy to comprehend, but at the same time demanding clear action from the EITI implementing countries.

Concerning the verification of the latter, EITI offers a lot of background information. Not only on how participating countries are monitored, but also what consequences have to be anticipated (EITI, 2019g). For example, if a country makes inadequate progress within the first 2.5 years, it gets suspended from the list of EITI certified producer countries for a limited period of a little less or more than a year, until another round of evaluation is coming up (EITI, 2019g). The 'sanction' is even stricter if a country has made not only inadequate but no progress at all, then it gets taken off the list completely (EITI, 2019g). Given that there are real repercussions that can follow for non-compliance makes this case of a VSP a very rigorous one.

Namibian Uranium Association

Accountability – Transparency

NUA's website provides many sections and documents but the amount of information offered in each section is much smaller. Yet, some information was disclosed which helps the NUA to hold itself accountable.

There are several annual reports available, both from NUA and from the Namibian Uranium Institute, which was established as a science and communication center to foster professionalism and knowledge about uranium in the Namibian society (NUA, 2017). One deficiency here is that the most recent editions are from 2017, thus more recent information is currently inaccessible to the greater public. In its charter, NUA also states that it promotes tailor-made standards, which reveals information about how it sets its standards, namely by consulting all three sides – the government, national uranium industry firms, and local stakeholders (NUA, 2020b).

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Interestingly, the values NUA mentioned under its mission-statement all mirror this paper's basic variables for becoming a trusted, reliable and credible VSP – integrity can be seen as the legitimacy question, transparency and accountability as well as compliance (NUA, 2020e). In its official standard document NUA refers many times to the importance of having independent accountants and reviews in place, but also to engage first-party auditors, since they should have an eye on the employees' ability to execute their tasks in conformity with the rules laid out (NUA, 2015). NUA's transparency is not shallow, as it reports annually, but not deep either, since more recent updates are missing.

Legitimacy – Inclusion

In its leading principles NUA subtly emphasizes that its VSP certification should benefit its own country by stating that the standards it sets support the local and corporate members in implementing good uranium governance to advance “the socio-economic development of Namibia” (NUA, 2020a, I. 3).

Even though NUA is a S³, thus an organization that develops guidelines and standards for the uranium mining companies specifically in Namibia, it should engage in some form with other actors that are connected to the Northern market, either MNCs and NGOs or even public institutions in order to strengthen its external legitimacy (see annex 1). Here, an interesting link to US-WNA was found on NUA's homepage. NUA wishes to work with the global nuclear energy industry towards implementing them (NUA, 2020d).

It seems that NUA is aiming at building the potentially missing external legitimacy by including mostly 'outside' people in its board of trustees, mostly company representatives from nuclear energy corporations or mining firms and through the presence of both Namibian and foreign experts in the scientific committee (NUA, 2017, 2020c).

Compliance – Rigor

To make companies comply with its VSP NUA acknowledges the priority of national legislation and demands thus from its members obedience to the government's rules at all times (NUA, 2020b) In its charter, NUA recommends participating countries to submit honest reports about their mining activities (NUA, 2020b). Despite this voluntary contribution from its members, NUA has its own monitoring team in place to ensure the compliance with the regulations (NUA, 2015). However, nowhere in the same document could any stringency in the form of a consequence like EITI has be found, which is likely due to the fact that NUA is a S³ and hence the Namibian national law stands above the NUA standards and the government is responsible for prosecuting non-compliance.

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Before concluding this paper, a short discussion will be provided. A strong caveat was the scope of this paper. Due to the limited space, presenting the empirical data available in a more detailed way, hereby enhancing the internal validity of this study, was not possible. If there is time and room for a future analysis of these cases, interviews could give further interesting insights both about accountability strategies and stakeholder empowerment, as well as the difficulties and maybe internal paradoxes concerning the rigor of standards across the different types of VSP.

Moreover, a reason why EITI is performing so well in all three categories might be its advantage in experience and the broad range of industrial sectors it covers. Maybe US-WNA and NUA will also improve after another decade.

Having a look at figure 2 above makes one realize that transparency was the variable, which was being exerted by all three VSPs, although to differing extent. Hence, transparency seems to be the key for gaining credibility. But higher inclusiveness and rigor would be desirable since the impact of disrespecting social needs in uranium rich countries and environmental values throughout the uranium mining process and waste rock storing can be lethal – both to the planet's and the workers' health.

Conclusion

The three cases studied in this article present a rather mixed picture. EITI is performing very strongly in all three categories and the likelihood of it being a credible actor is high. US-WNA performs worst. Relying on it seems difficult. In contrast, NUA has started off well and has the potential to become a highly trusted VSP for uranium.

Those VSPs that are already in place, but less trustworthy at the current moment, like the US-WNA or NUA, should improve their overall performance in terms of how transparent, fair and inclusive, and strict they are. A good place to start would be an international summit of VSPs in the uranium sector so that experiences can be exchanged, and lessons are learned from established and reliable VSPs to weaker and younger ones.

In conclusion, if nuclear energy ought to be perceived as a feasible means and sustainable opportunity to fight global warming in the near future, the drawbacks of the global uranium production have to be tackled by VSPs, that specialize in the uranium sector and take care of their credibility to the outside world.

Notes

[1] The most immediate and effective advantage is nuclear energy's character as a low-carbon electricity source as it does not transmit GHG emissions into the air when being generated in a reactor (Nuclear Energy Agency, 2015). Furthermore, it is 24 hours available and cost-efficient once a power plant is up and running, as its lifetime spans approximately 40 years (International Atomic Energy Agency, 2016).

[2] While Namibia (7%), Niger (5%) and Australia (30%) ship all of their uranium, Canada uses a small portion of its own uranium at home, but then still sells 85% of the total Canadian uranium production abroad (~7%)* (Vestergaard, 2015). In aggregate terms, a little less than 50% of all contemporary uranium fuels originate from one of these four countries. This implies that roughly every second to third nuclear energy supply chain begins outside of the country of conversion and final consumption. Heating a house from nuclear energy is thus very detached from the people who put their lives at risk to produce the required UOC. Both the uncertainty of how well protected mines are and long transportation of several thousand kilometers, hereby using CO₂ emitting ships and trucks to deliver the UOC, put a major constraint on the overall sustainability of nuclear energy (Center for Strategic & International Studies, 2018). *In these round brackets behind the country name the global market share of a country's uranium production can be found (as of 2017) (World Nuclear Association, 2019d).

[3] With a focus on business actors not on VSPs a paper was written in a similar vein. It investigated nine of the largest nuclear energy corporations and their CSR measures, but with a focus on their commitment to non-proliferation of nuclear materials (Bourgouin, 2015). Furthermore, Niger and its development path has been studied in the context of uranium mining (see e.g. Dasnois, 2012; Larsen & Mamosso, 2014).

[4] Vattenfall, an energy company active across Europe and member of WNA, is a rare example of a firm that refers to the US-WNA and states it has contributed in developing the principles (Vattenfall, n.d.). Interestingly, Vattenfall

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speaks of eleven instead of ten principles in the policy end-document, however in this document (World Nuclear Association, 2010) only ten principles of uranium stewardship could be found.

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