

## From the AIJV's Founder, Adrian Smith, FGA FGVA

**The gestation of the AIJV** started as an informal group of six appraisers in the UK, USA, and Ireland around 2008, all truly independent. They did not buy, sell, or broker jewellery-related items. At that time, retail jewellers took in the vast majority of appraisals. In the main, a “Trade Valuer” performed the work, whom the retailer engaged as an outworker. These unseen heroes produced appraisal reports without public awareness, often on the jewellers’ stationery! The concept of an appraiser jewellery owners could approach directly was entirely unknown to British and Irish consumers.

Our intention back then was to find better ways to conduct business and share knowledge and experience to rectify this issue. We felt that the word “Independent” had become almost meaningless and was increasingly being used more as a marketing term rather than an accurate description of the stance and status of the appraiser.

In 2010 the AIJV was created after it became apparent there was great value in professionals from differing cultures and localities sharing their ideas and experiences, particularly in business development. The membership grew steadily despite strict entry criteria, complete independence being front and center of the requirements list for membership. Sharing useful information and supporting each other’s business growth was the objectives’ cornerstone. The scope of activities then broadened to include marketing the members’ services to consumers and promoting the benefits of using a truly independent appraiser.

Partly as a result of the AIJV activities and of its members, the public is now aware of this niche profession and the number of jewellery appraisal practices has blossomed in recent years, particularly in the UK. Now that the AIJV is under Çiğdem Lüle’s leadership, the association will again expand in new directions. ♦

## Greenwashing and the Future of Synthetic Diamonds: The Industry Disruptor

*By Shadi Jian-Zibae, GIA GG*

**Synthetic or laboratory/lab grown diamonds** (LGDs) have come a long way since General Electric created the first gem quality crystals in the 1970s. In the early days, LGDs were used for industrial purposes, but as the quality of the stones improved so did their potential applications, for the medical and technology sectors. The jewellery industry was of course a logical market for manufacturers to develop. As production costs came down the opportunity for bigger profit margins became apparent.

Since then, LGDs in the jewellery trade have gone from outsider to tech disruptor, to serious contender and in the process have transformed the diamond industry, accounting for almost half (46.6%) of the market share of all loose diamonds sold in the USA today. At present, the US accounts for approximately half of global diamond consumption. The producers quickly recognised that if LGDs were going to penetrate the jewellery industry as anything more than a novelty, they needed to develop the market. As a result, and in a relatively short period since 2020, loose LGD unit sales have tripled to 33.8%, taking even the most experienced industry insiders by surprise.<sup>1</sup>

The LGD manufacturers believe that this is further evidence that the industry was ready for change, and that consumers are crying out for something different to what they perceive to be an old-fashioned business, controlled by a handful of diamond mining giants, dealing in ‘blood diamonds’ and with a long history of environmental and human rights abuses. On the other side, the mined diamond industry has positioned LGDs as manufacture-on-demand cheap, fashion jewellery stone — and not a ‘real diamond.’

*Continued on page 3*

## A few words from the Executive Director, Çiğdem Lüle . . .

**The appraisal profession had been an enigma** to me for much of my gemology career. While I wanted to keep feeding my scientist soul, as a practicing gemologist, I needed to hold the pulse of the gem trade. The more I got involved in trade and gem market research, the more I realized the importance of independence in the valuation process. In fact, I'd say it is of paramount importance to maintaining the confidence of the jewelry buying public. The enigma eventually resolved when I started seeing the truly independent activities of dedicated colleagues. My long-time appreciation for Adrian's vision and admiration for AIJV's founding members are unwavering.

Naturally, taking over AIJV was both flattering and daunting. There is no doubt that I have very big shoes to fill, yet the confidence granted by Adrian for such a task is profoundly encouraging. Following Adrian's introduction of my new role to the group, I have had the same positive encouragement from the respected members. I truly am grateful for that.

I am all for education and a firm believer in sharing knowledge. It is my observation that practical experience shapes much of our profession. But what is experience if not accompanied by an unbiased, logical approach executed with integrity and then willingly shared in support of advancing the profession? That's exactly what I saw in AIJV as a member in the past, and what I will

continue to work towards as AIJV's new director. My vision is to extend the idea of sharing to educate newcomers, non-independent appraisers, and valued clients and consumers.

The gem and jewelry appraisal community does not need yet another appraisal credential. What our profession can benefit from is more cooperation with continuing education and sharing practical and new approaches to valuation challenges that we may individually encounter, as well as to understand each other better. I wanted to start with inviting non-independent appraiser colleagues to join as "supporters" of the AIJV. I believe this opens an opportunity for the beneficial exchange of information. Our third tier is "candidates" who are gemologists and/or appraisers in training. Hopefully, our future activities, such as this Valuer's NewsBrief, will benefit every tier of AIJV and encourage to share more.

I would also like to acknowledge Bonnie Wolff, GIA GG, as our Director of Operations. Her vast experience in gemological education as a former GIA instructor and now a college teacher is capped off with her many years as an independent appraiser. I am delighted to have her on our team!

And a big **thank you** to all of you, our original and current members, for making AIJV such a special group. Last but not least, I am eternally grateful to Adrian for giving me this opportunity. ♦

### ■ 2023 CGA 65th Gem Conference

Vancouver, BC. **Oct 20 – 22**

[canadiangemmological.com/2023-cga-conference-2/](https://canadiangemmological.com/2023-cga-conference-2/)

### ■ 7th International Gemmological Conference –

Toyko, Japan. **Oct 23 – 27** [igc-gemmology.org/igc-2023](https://igc-gemmology.org/igc-2023)

### ■ Gem – A Conference

London, UK. **Nov 5** [gem-a.com/event/conference-2023](https://gem-a.com/event/conference-2023)

**2024**

### ■ Facets Sri Lanka International Gem and Jewelry Show 2024

Colombo, Sri Lanka. **Jan 6 – 8** [facetssrilanka.com/](https://facetssrilanka.com/)

### ■ NAJA 61st Winter Conference

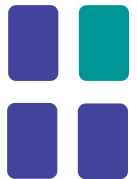
Tucson, AZ. **Jan 28 – 29**

[najaappraisers.com/event/61st-annual-aceit-winter-education-conference/](https://najaappraisers.com/event/61st-annual-aceit-winter-education-conference/)

### ■ AGA 50th Tucson Conference and Gala

Tucson, AZ. **Jan 31** [accreditedgemologists.org/currevent.php](https://accreditedgemologists.org/currevent.php)

EVENTS • October 2023 – January 2024



## Greenwashing continued

Elements in the mined diamond industry have accused LGD manufacturers of ‘greenwashing’ and of deceiving the public by marketing their products as sustainable, environmentally more responsible, and more ethical than mined diamonds, claims which have drawn considerable pushback from observers for being misleading. Trade groups have also become increasingly concerned by the failure of segments within the industry to inform consumers that LGD prices have continued to decline month to month and year by year, despite claims that prices were stabilizing. At the time of writing, the author is unaware of a single retail jeweller that will knowingly buy LGDs over the counter from a consumer, nor of an auction house that will accept one for auction.

The ethical and environmental practices of both the lab grown and mined diamond industries have come under the spotlight recently, as the two battle it out for the lucrative bridal market, with brands targeting the younger demographic and the ‘conscious consumer’ who prioritise sustainability, human rights, and social responsibility (Ethical, Social Governance (ESG) and Corporate Social Responsibility (CSR)) in their purchasing decisions.

### NOT ALL DIAMONDS ARE CREATED EQUAL

Lab grown diamonds are not mined as a gemstone and as such avoid any direct, negative associations with the mining industry, however material resources are still used in the production of these stones. In both the High Pressure High Temperature (HPHT) and Chemical Vapour Deposition (CVD) methods of LGD production, a carbon source is used in conjunction with a mixture of gases and metals during the growing process.

In the case of HPHT diamond manufacture, a carbon starting material such as graphite or diamond powder dissolves in a flux made of metals including iron, nickel, and cobalt and crystallises onto the surface of a piece of ‘diamond seed’ inside the chamber. In CVD diamonds, a mixture of hydrogen and carbon containing gas such as methane, are heated to precipitate a deposit of carbon onto the surface of a thin sliver of diamond or graphite (seed). Many LGDs then undergo an additional post-growth treatment typically HPHT, to further enhance their colour. These are energy intensive processes.

The carbon sources and ‘seed’ whether diamond or graphite, and the other gases and metals used in the production process are still mined or extracted from the earth. A further question then, is whether LGD manufacturers have included the sourcing of these materials in their ethical and environmental assessments and in their carbon footprint.



In addition to this, many of the lab grown diamond factories are based in countries such as China and India. In 2019 China had a 56% share of global LGD production, while India produced 15% that year.<sup>2</sup> As an energy hungry production process, it’s important to consider the source of this energy. These countries still rely heavily on fossil fuels for their energy<sup>3</sup> — China sourcing 55% and India 75% of its energy from coal power, the dirtiest of the fossil fuels.<sup>4, 5</sup> Many diamond producers continue to use coal-fired power but buy carbon credits to offset their footprint in order to become certified as sustainable or carbon neutral.<sup>6</sup> On that basis, and contrary to their marketing, the majority of lab grown diamonds on the market today are not sustainably produced, in the opinion of the author.

Mining is also a critical part of supporting the green economy. Certain metals, and minerals such as copper, nickel, cobalt, manganese, graphite and lithium are crucial for producing the batteries and technologies used for wind turbines and solar panels.<sup>7</sup> Therefore, whether diamonds are grown in a lab or mined using renewable energy, the additional natural resources required to produce the green technology would have to be extracted from the earth. However, it’s worth recognising that purely by its nature, the extraction industry is inherently prone to more environmental and societal issues. So, is it possible to have ethical or environmentally sound “diamond mining” or “green” LGDs?

### TRANSPARENCY and TRACEABILITY ARE THE KEY PRIORITIES

Chairman of the Rapaport Group, Martin Rapaport<sup>8</sup> when speaking about the challenges around synthetic diamonds and sanctions against Russia, said “It’s all about distribution, where do your diamonds come from? ... It’s not enough to talk about it, you have to say what you are going to do about it.”

*Continued next page*



## Greenwashing continued

These questions around transparency and traceability are ones that have plagued the mined diamond industry for some time and are the same questions that the LGD industry faces. What's clear is that any meaningful ethical and environmental claims need to be independently verified, which is where third-party auditing and certification plays an important part.

Some LGD producers are moving toward certification of their practices through third party authorities. Scientific Certification Systems (SCS) Global Services, is one such authority, approved by the Responsible Jewellery Council (RJC).<sup>9</sup> They released their Certification Standard for Sustainable Diamonds, SCS-007 which provides a framework for assessing the environmental and social impact and certifying mined, synthetic, and recycled diamonds.<sup>10</sup> Of the LGD manufacturers only a small number located in the US and Israel, such as Lusix Lab-Grown Diamonds, WD Lab Grown Diamonds, and GreenRocks Created Diamonds, hold the SCS sustainability certification. However, it should be noted that failure to apply for certification does not mean that a competing company's product is produced in a fundamentally different manner. None of the diamond mining companies have signed up to this certification (SCS), although DeBeers and Rio Tinto have completed third party, independent auditing, and certification through different organisations.

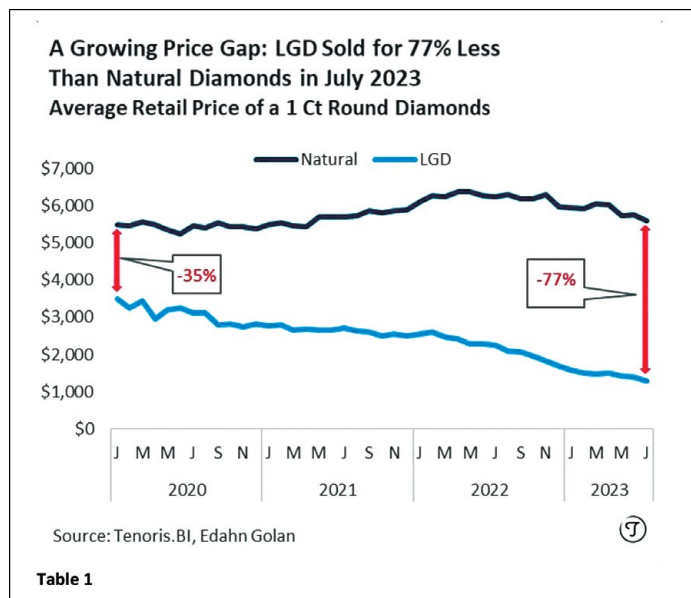
Some of the other certifications used by a handful of LGD manufacturers include The Carbon Trust, Co2 Neutral label, Vegan Action and in the case of Aether Diamonds, a socially responsible designation as a B-Corporation (B-Corp). However, the majority of LGD manufacturers, many of whom are located in India and China, provide little or no information about their manufacturing processes or any independent audits.

Amit Shah, founder of ALTR Created Diamonds, called on the LGD industry not only to back their claims of sustainability, but to expand their goals beyond just environmental sustainability.<sup>11</sup>

Beyond the Kimberley Process Certification Scheme (KPCS), the mined diamond industry as a whole hasn't committed to one third-party certification standard to improve traceability and transparency, that all members can participate in. The picture for the LGD industry is not very different. Sustainability ratings are also relatively new to the diamond industry, however both the mined and lab grown diamond industries should be working towards the United Nations Sustainable Development Goals (UN's SDGs) and improving their ESG targets with the help of independent, third party auditing and certification.

## PRICE VERSUS ETHICS AND ECO-CREDENTIALS

Although recent research has shown that the ethics and eco-credentials of a diamond are important, price is arguably the most important factor when it comes to the purchasing decision. For many, the arrival of synthetic diamonds has democratised diamonds because, at a fraction of the price of natural mined diamonds, they are now more accessible to a wider range of price-sensitive consumers. Some have described them as "gateway diamonds," particularly for younger consumers who it's hoped will eventually graduate to the more expensive mined diamond category.



Today (as of the day of this publication), prices of synthetic diamonds are on average 77% cheaper than the equivalent mined diamond (see Table 1), with a 2ct lab grown diamond now retailing at around 30% cheaper than a 1ct natural mined diamond.<sup>12</sup> At these prices, the "green" credentials of LGDs, are seen as simply the icing on the cake.

Howard Levine, Managing Director of the UK based online diamond trading platform Diamnet, selling both mined and LGDs, on the importance of 'eco-credentials' compared to price, said, "I think they are very important to a small number and quite important to a lot. Young people today do care about our environment and sustainability. It is extremely easy to see that the Earth is mined to find natural diamonds. Just that thought alone is enough for many to say to themselves that it is better to not have to take from the Earth if there is an alternative. When you add this element to the price difference the choice becomes extremely easy for most."

When considering the importance of ethics (business / corporate ethics)– which encompasses governance and overall business practices, including workers' rights, Howard suggests this is more nuanced, "Personally, I

*think the ethics side of the argument is not as strong or important as the eco side. I think the ethics on both sides is a little murky and gets too confusing, and I do not believe that many believe that natural diamonds are ethically bad. At least it is not bad enough to cause them to stay away. ... Price is definitely the stronger driver for the consumer, with every other element only helping to justify their decision."*

In a 2022 survey by Jonathan Solomons (Solomons & Rose) at various locations across the UK, shoppers aged 18–65+ years were asked about the importance of ethics in their purchasing decisions of diamonds. They found a similar story that, "Overall ethics and environmental concerns ranked significantly lower than price." Ultimately, Solomons explains, "... People are happy to get more for less."

Production of lab grown diamonds is set to increase as more manufacturers enter the market and as productivity improves. In March 2023 Martin Rapaport (Presenting at the Israel Diamond Exchange), estimated an increase of 70% in the volume of diamonds produced over the next 12 months alone, suggesting that prices would continue to drop. Rapaport went on to report that despite this dramatic price reduction in the lab grown diamond prices, retailer's profit margins are rising approximately 65%. He argues that this is unfair to the consumer, particularly in view of resale value which is widely accepted to be nearly non-existent.

As LGD prices continue to drop, manufacturers are looking for ways to add value.

## CERTIFIED 'GREEN' DIAMONDS AND ADDED VALUE

Looking to the mined diamond category, it's possible to find examples of sources that have been successfully marketed as 'ethical diamonds', such as the Australian origin diamonds and the 'Canadamark' programme. The Canadamark diamond programme, for example, promises responsibly and sustainably mined diamonds from the Northwest Territory of Canada. Each diamond is inscribed with a unique code and supplied with a certificate, tracing its journey from mine to market. Based on recent price comparisons, these stones can realise a price premium of somewhere between 5–10% above non-branded diamonds. Again, it should be noted that diamonds from other producers are not inherently unethical just because they have not entered into a similar marketing program. This has been an issue for some smallscale producers in both the colored stone and diamonds sector.



Looking at this marketing model, could a 'green' lab grown diamond, produced through a highly regulated production and certification scheme, be sold at a premium, and could this 'ethical /eco' diamond story and associated branding help the stone to retain its value longer? In desktop research conducted in August 2023, comparing prices of LGDs sold on different brand's websites, there was a noticeable price difference. Whilst some manufacturers have been endorsed by the Pope –Diamond Foundry<sup>13</sup> was blessed for their ethical endeavours; others are offering carbon neutral or diamonds "made from air." These suppliers appear to be charging a premium for their stones compared to the average LGD stockist. (See price comparison information below).

**SkyDiamonds** — Loose stones 1.02ct H, VS2 Round Brilliant Lab Grown diamond listed at £4,582 (Sterling)

**Aether Diamonds** — (set in a ring) 18k Gold ring with 1ct Round Brilliant Lab Grown diamond, minimum I, SI1 quality listed at \$3,075 (US Dollar)

**Diamond Foundry** (Sold through Vrai Retail jewellery brand) — Loose stone Round Brilliant Lab, 1ct H, VS2 = £1,035 (Sterling)

**GreenRocks Diamonds** — Loose stone Round Brilliant Lab Grown diamond, 1.02ct H, VS1 IGI Certed, listed at \$320.

Co-founder of Aether Diamonds, Ryan Shearman, explains that because of Aether's two-step process (carbon capture and diamond growth), its diamonds tend to be priced above other LGDs. "We offer meaningful perceived value to the consumer. The only thing that sells a diamond is the story, and we have it. Other LGDs don't," he continues.<sup>14</sup>

As lab grown diamond manufacturers increasingly collaborate with luxury jewellery brands and designers, the value will arguably be in the jewellery and not the stone – as expressed by Amit Shah — the value is not in the paint, but in the art, that's created with the paint.

## THE FUTURE

The rise of the 'conscious consumer' is coupled with the 'digital native' amongst Millennials (born 1980–1995) and Gen Z (born 1995–2000) who are the first generation that has never known a life without technology. They use technology to educate themselves, research, and shop from brands whose values align with theirs. The lab grown diamond manufacturers have seized on this opportunity and successfully positioned themselves as the modern tech-driven, sustainable and more affordable alternative to their mined counterparts.

Campaigns that leveraged the “green” benefits of lab grown diamonds have no doubt played an important part in attracting sales; and whilst this greenwashing has muddied the water somewhat, extremely low prices continue to be the primary driver in the consumer’s decision to purchase a LGD over a mined diamond, possibly without full understanding of their long term investment value.



Solomons believes that “... retained value of diamonds is still important to a large sector of consumers ... What I would say is that consumers are not fully aware of the resale and aftermarket value of synthetic diamonds.”

“We don’t have a magic ball and cannot predict future scenarios,” explains Anna Rogers, a London based independent valuer and member of the Institute of Registered Valuers (IRV). “One thing I am most certain about is that valuers will see more of these items for insurance valuations in the near future. Personally, I have regular younger clients (typically under 30 years) bringing LGD diamonds for the insurance valuation. The insurance companies refer them to an IRV (Institute of Registered Valuers) registered valuer. It is my job to provide such a document for insurance purposes, no matter how high or low the valuation is.” She goes on to explain, “Just because it doesn’t have a ‘resale value’ — it doesn’t mean that it doesn’t have an insurance value — as for today.”

The resale value of synthetic diamonds is still evolving and, as more and more of these diamonds enter the market either for insurance claims or in second hand jewelry, their value will become clearer. What may take more time is understanding how they will be valued in luxury jewelry.

In the meantime, some luxury brands are quietly testing the water by experimenting with lab grown diamonds, often under a different label, thereby avoiding any potentially negative attention. In 2022, an old jewelry label ‘Massin’ was revived using only recycled gold and

lab-grown diamonds (supplied by Latitude Diamonds), with an emphasis on sustainability and ethics. Taking a slightly different approach, LVMH (parent company of Tiffany and Louis Vuitton) invested in Israeli lab grown diamond producer Lusix. Tag Heuer (another LVMH brand) subsequently launched a limited edition watch featuring Lusix lab grown diamonds. Other brands — including Swarovski, Pandora, and De Beers (Lightbox) — have already openly invested in LGD collections. In these instances, the synthetic diamond has been elevated by the brands and superior craftsmanship, despite the ‘cheap’ price point and low value. It’s worth noting that De Beers almost immediately discontinued their mounted engagement ring programme noting that their LightBox collection will continue to focus on fashion jewelry and loose stones for low budget consumers, “the most promising future opportunities in the sector.” De Beers’ experience with the programme reinforces the position that large demand for LGDs engagement rings is unlikely.

In his report in March 2023,<sup>15</sup> Golan predicts that in the not-too-distant future, synthetic diamond sales will overtake that of mined diamonds. According to Bain & Company, a global consultancy, mined diamond production peaked in 2019 and is set to decrease from then on as diamond sources are depleted and mining operations close.<sup>16</sup> The LGD industry sees this as an opportunity to fill the gap left by mined diamonds. Mona Akhavi, CEO of Vrai jewelry, explains that once their new Spanish factory is operational in 2025 they will be producing 20 million carats of rough per year. This, says Akhavi, amounts to about 60% of what DeBeers is mining presently, proving that the LGD technology can replace mined diamond production in terms of capacity.<sup>17</sup> This raises the important question of what a diamond means to the jewelry industry and to consumers beyond the 4 Cs and its investment value. Is there a 5th C, and if so, what is that? Conflict-free certification, or is it something else entirely – the emotional connection and symbolism behind the stone? If consumers are only buying a diamond for its emotional value, is it possible that a LGD can fulfil these emotional needs?

There is also an opportunity for both synthetic and mined diamond suppliers to improve their ESG scores and substantiate their claims through certification, in order to meet consumer expectations. The danger for the mined diamond industry in particular is that if it doesn’t address the issues around its environmental and ethical practices, it may become irrelevant and marginalised. For LGDs, the danger of overproduction, misinformation about price and greenwashing could burst the bubble very quickly. What’s become clear is that like many industries in recent years, technology has enabled businesses to ‘disrupt’ existing models – the diamond industry is the latest in this list and LGDs the industry disruptor. ■



## References

- 1 Edahn Golan Diamond Research & Data, 30 March 2023 *Diamond Analytics Forecast: When Will Lab-Grown Diamond Sales Be the Majority?* – [www.edahngolan.com/diamond-analytics-when-will-lab-grown-diamond-sales-be-the-majority/](http://www.edahngolan.com/diamond-analytics-when-will-lab-grown-diamond-sales-be-the-majority/)
- 2 De Beers commissioned Diamond Acquisition Study (DAS) US 2022
- 3 [www.skydiamond.com/blog/diamonds-in-the-sky-how-our-diamonds-are-born/#:~:text=An%20adventurous%20and%20ambitious%20project,these%20luxurious%20loose%20diamonds%20do.](http://www.skydiamond.com/blog/diamonds-in-the-sky-how-our-diamonds-are-born/#:~:text=An%20adventurous%20and%20ambitious%20project,these%20luxurious%20loose%20diamonds%20do.)
- 4 [www.aetherdiamonds.com](http://www.aetherdiamonds.com)
- 5 [www.diamondfoundry.com](http://www.diamondfoundry.com)
- 6 [www.aetherdiamonds.com/pages/our-diamonds](http://www.aetherdiamonds.com/pages/our-diamonds)
- 7 13 October 2022 – *How Sustainable Lab-Grown Diamonds Are Reshaping The Luxury Jewelry Industry* – [www.scsglobalservices.com/news/how-sustainable-lab-grown-diamonds-are-reshaping-the-luxury-jewelry-industry](http://www.scsglobalservices.com/news/how-sustainable-lab-grown-diamonds-are-reshaping-the-luxury-jewelry-industry) AND [www.statista.com/topics/7108/lab-grown-diamond-industry/#topicOverview](http://www.statista.com/topics/7108/lab-grown-diamond-industry/#topicOverview)
- 8 The Guardian, 10 March 2020 – *Are laboratory-grown diamonds the more ethical choice to say ‘I do’?*
- 9 Forbes, 24 August 2019 – *Lab-Grown Diamonds: Regulators Warn That Some Claims Fail To Fulfil Their Hype* – [www.forbes.com](http://www.forbes.com)
- 10 [www.greenpeace.org.uk/challenges/coal/](http://www.greenpeace.org.uk/challenges/coal/)
- 11 [diamondfoundry.com/blogs/the-foundry-journal/crystallizing-greenhouse-gas-into-diamond-now-paying-up-for-atmospherically-extracted-methane](http://diamondfoundry.com/blogs/the-foundry-journal/crystallizing-greenhouse-gas-into-diamond-now-paying-up-for-atmospherically-extracted-methane)
- 12 [www.man.com/maninstitute/mining-ever-ethical](http://www.man.com/maninstitute/mining-ever-ethical)
- 13 [www.naturaldiamonds.com/industry-insights/the-frame-work-for-an-ethical-and-sustainable-diamond-industry/](http://www.naturaldiamonds.com/industry-insights/the-frame-work-for-an-ethical-and-sustainable-diamond-industry/)
- 14 Martin Rapaport (March 2023 Israel conference) [www.youtube.com/watch?v=GelA-IbsXyg](http://www.youtube.com/watch?v=GelA-IbsXyg)
- 15 Episode 93, Dispatched from “Lab Grown Symposium” in Dubai, 18, July 2023 – Rapaport Diamond podcast
- 16 [mineralseducationcoalition.org/mining-minerals-information/minerals-in-your-life/](http://mineralseducationcoalition.org/mining-minerals-information/minerals-in-your-life/)
- 17 The State of Fashion: Watches & Jewellery Report, by The Business of Fashion and McKinsey & Company, June 2021
- 18 De Beers Building Forever Goals – [www.debeersgroup.com/sustainability-and-ethics/building-forever-2030-goals](http://www.debeersgroup.com/sustainability-and-ethics/building-forever-2030-goals)
- 19 Rio Tinto – [www.riotinto.com/en/sustainability/climate-change](http://www.riotinto.com/en/sustainability/climate-change)
- 20 Forbes, 4 June 2023 – *How Diamond Foundry Is Using Vrai To Elevate Lab-Grown Diamonds To True Luxury* – [www.forbes.com/sites/pamdanziger/2023/06/04/with-vrai-diamond-foundry-plans-to-make-lab-grown-diamonds-true-luxury/](http://www.forbes.com/sites/pamdanziger/2023/06/04/with-vrai-diamond-foundry-plans-to-make-lab-grown-diamonds-true-luxury/)
- 21 Forbes, 4 March 2022 – *Diamonds Created Out Of Thin Air Sounds Like Magic. Aether Is Doing It.* [www.forbes.com/sites/pamdanziger/2022/03/04/diamonds-created-out-of-thin-air-sounds-like-magic-aether-is-doing-it/](http://www.forbes.com/sites/pamdanziger/2022/03/04/diamonds-created-out-of-thin-air-sounds-like-magic-aether-is-doing-it/)
- 22 [www.un.org/sustainabledevelopment/climate-change/](http://www.un.org/sustainabledevelopment/climate-change/)
- 23 Bain Insight Report, 11 December 2019 – *Strong Origins: Current Perspectives on the Diamond Industry* – [www.bain.com/insights/global-diamond-industry-report-2019/](http://www.bain.com/insights/global-diamond-industry-report-2019/)

## Endnotes

- 1 Edahn Golan Diamond Research & Data, March 30, 2023 *Diamond Analytics Forecast: When Will Lab-Grown Diamond Sales Be the Majority?* – [www.edahngolan.com/diamond-analytics-when-will-lab-grown-diamond-sales-be-the-majority/](http://www.edahngolan.com/diamond-analytics-when-will-lab-grown-diamond-sales-be-the-majority/)
- 2 13 October 2022 – *How Sustainable Lab-Grown Diamonds Are Reshaping The Luxury Jewelry Industry* – [www.scsglobalservices.com/news/how-sustainable-lab-grown-diamonds-are-reshaping-the-luxury-jewelry-industry](http://www.scsglobalservices.com/news/how-sustainable-lab-grown-diamonds-are-reshaping-the-luxury-jewelry-industry) AND [www.statista.com/topics/7108/lab-grown-diamond-industry/#topicOverview](http://www.statista.com/topics/7108/lab-grown-diamond-industry/#topicOverview)
- 3 The Guardian, 10 March 2020 – *Are laboratory-grown diamonds the more ethical choice to say ‘I do’?*
- 4 Forbes, 24 August 2019 – *Lab-Grown Diamonds: Regulators Warn That Some Claims Fail To Fulfil Their Hype* – [www.forbes.com](http://www.forbes.com)
- 5 [www.greenpeace.org.uk/challenges/coal/](http://www.greenpeace.org.uk/challenges/coal/)
- 6 [diamondfoundry.com/blogs/the-foundry-journal/crystallizing-greenhouse-gas-into-diamond-now-paying-up-for-atmospherically-extracted-methane](http://diamondfoundry.com/blogs/the-foundry-journal/crystallizing-greenhouse-gas-into-diamond-now-paying-up-for-atmospherically-extracted-methane)
- 7 [www.man.com/maninstitute/mining-ever-ethical](http://www.man.com/maninstitute/mining-ever-ethical)
- 8 Martin Rapaport (March 2023 Israel conference) – [www.youtube.com/watch?v=GelA-IbsXyg](http://www.youtube.com/watch?v=GelA-IbsXyg)
- 9 [mineralseducationcoalition.org/mining-minerals-information/minerals-in-your-life/](http://mineralseducationcoalition.org/mining-minerals-information/minerals-in-your-life/)
- 10 The State of Fashion: Watches & Jewellery Report, by The Business of Fashion and McKinsey & Company, June 2021
- 11 Episode 93, Dispatched from “Lab Grown Symposium” in Dubai, 18, July 2023 – Rapaport Diamond podcast
- 12 Edahn Golan Diamond Research & Data (n1) 4
- 13 Forbes, 4 June 2023 – *How Diamond Foundry Is Using Vrai To Elevate Lab-Grown Diamonds To True Luxury* – [www.forbes.com/sites/pamdanziger/2023/06/04/with-vrai-diamond-foundry-plans-to-make-lab-grown-diamonds-true-luxury/](http://www.forbes.com/sites/pamdanziger/2023/06/04/with-vrai-diamond-foundry-plans-to-make-lab-grown-diamonds-true-luxury/)
- 14 Forbes, 4 March 2022 – *Diamonds Created Out Of Thin Air Sounds Like Magic. Aether Is Doing It.* [www.forbes.com/sites/pamdanziger/2022/03/04/diamonds-created-out-of-thin-air-sounds-like-magic-aether-is-doing-it/](http://www.forbes.com/sites/pamdanziger/2022/03/04/diamonds-created-out-of-thin-air-sounds-like-magic-aether-is-doing-it/)
- 15 [www.un.org/sustainabledevelopment/climate-change/](http://www.un.org/sustainabledevelopment/climate-change/)
- 16 Bain Insight Report, 11 December 2019 – *Strong Origins: Current Perspectives on the Diamond Industry* – [www.bain.com/insights/global-diamond-industry-report-2019/](http://www.bain.com/insights/global-diamond-industry-report-2019/)
- 17 Forbes (n13) 6.