Lab-grown Diamond Exports Set for Revival in FY25

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Synopsis

- The exports of Lab-grown Diamonds (LGDs) are declining and have seen around 16.5% decline y-o-y for FY24. While the sales volume of LGDs have been growing, the declining prices have impacted the exports. However, the depreciating rupee is likely to act as a cushion for the industry. Overall, the LGD exports are expected to witness a revival in exports with expected growth of 7-9% to reach ~US$1500-1530 million in FY25.
- Going forward the demand for LGDs is expected to revive in FY25, as demand for naturally mined diamonds may remain sluggish. This is attributed to its price point, environmental sustainability, and intensified competition from India against other leading LGD-producing nations.
- Affordability, environmental sustainability, and similarity are the primary factors that are expected to revive the demand for LGDs, particularly in the 1-3 carat segment of natural diamonds. With nearly identical chemical, optical, and physical properties and a crystal structure as that of natural diamonds but at a fraction of their cost, LGDs have experienced considerable growth in the last few years.
- With the escalation of gold and natural diamond prices, consumers are looking for affordable alternatives in precious jewellery. The lab-grown diamond-studded jewellery aptly caters to this demand.

Overview of Lab-Grown Diamonds

The gems & jewellery sector played a significant role in the Indian economy, contributing 7.6% to India's total merchandise export from April to February 2023-2024. One of the major technological developments in this sector has been laboratory-grown diamonds (LGD).

LGDs are authentic diamonds produced in laboratories by replicating the natural diamond formation process that occurs beneath the earth's surface. Consequently, LGDs exhibit the same chemical, thermal, optical, and physical properties as mined diamonds. However, since they are not extracted through mining, LGDs mitigate the social and environmental impacts associated with mining activities. This makes LGDs environmentally sustainable and contributes to saving our natural resources. Furthermore, by eliminating the expenses related to mining, LGDs become notably more cost-effective, as compared to naturally mined diamonds.

There is growing awareness regarding the environmental and economic advantages of LGDs, particularly Chemical Vapor Deposition (CVD) diamonds, in India. Also, they are an absolute Made-in-India product. Besides, the younger generation is increasingly inclined to LGDs.

Furthermore, the process of cultivating diamonds in a laboratory commences with a small diamond seed, placed within a chamber that simulates the natural conditions found deep within the Earth's crust where diamonds form. LGDs are generated using two primary methods: Chemical Vapor Deposition (CVD) and High-Pressure High Temperature (HPHT).

CVD yields diamonds certified as Type IIA, regarded as the purest type by major diamond certifying bodies. Type IIA diamonds are exceedingly rare, even among mined diamonds, constituting approximately only 2% of the total. Whereas LGDs produced via the HPHT method, employed predominantly in China, differ in hardness from both mined and CVD-grown diamonds, often containing metal impurities.

However, the technology for consistently producing gem-quality LGDs is highly capital-intensive and time-consuming. Both LGDs and natural diamonds undergo grading based on the 4Cs – carat weight, colour, clarity, and cut.

Moreover, lab-grown diamonds are also used in computer chips, satellites, and 5G networks as they can be used in extreme environments due to their potential to operate at higher speeds while using less power than silicon-based chips. LGD has vast applications in the defence, optics, jewellery, thermal, and medical industries.

To enhance domestic production, the Finance Minister announced a five-year research and development grant. Additionally, a reduction in customs duty on seeds utilized in the production of lab-grown diamonds was proposed to decrease production costs alongside promoting domestic manufacturing.

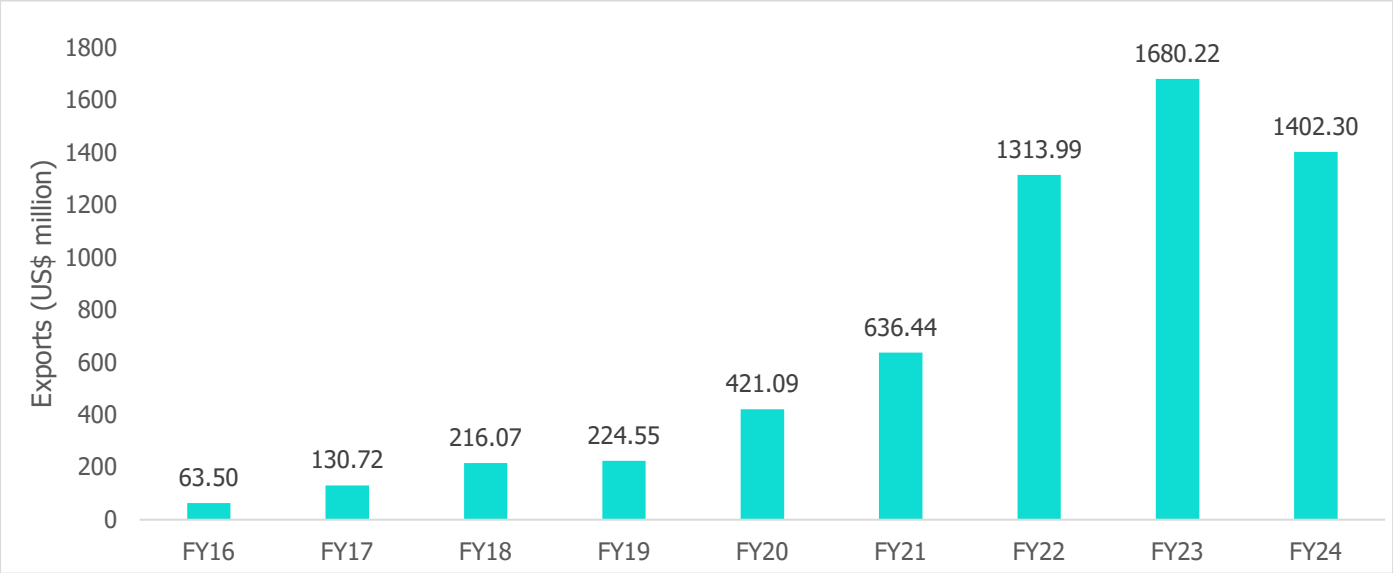
Market Size

India produces over three million lab-grown diamonds a year and accounts for 15% of the global production. At present, India is the second-largest producer of lab-grown diamonds, trailing behind China. Other than China and India, countries like the U.S., Singapore and Russia are also leading manufacturers of lab-grown diamonds. In 2022, the market for lab-grown diamond jewellery in India was valued at US$ 264.5 million. In 2023, the expected value of the domestic lab-grown diamond market is $300 million.

Declining Prices Lead to Lower Exports

Similar to the Cut and Polished Diamonds (CPD), the declining price of LGD during recent times has resulted fall in India's exports of LGD to key export destinations. Exports of LGD have recorded a decline of 16.5% from US$ 1680.22 million in FY23 to US$ 1402.30 million in FY24.

Chart 1: Lab-Grown Diamonds Exports



Source: GJEPC

During FY24, the USA, Hong Kong, and UAE collectively dominated India's export for lab-grown diamonds, accounting for 90% of the total exports. The exports of LGD saw ~60% CAGR from FY16 to FY23, however from FY23 to FY24 there was a decline of 16.5% y-o-y. The exports to all other countries witnessed a decline except for countries like Germany, the UK, Italy and China showing significant export growth during FY24. The G7 ban on Russian-origin diamonds may be one of the reasons for this. The primary reasons behind the export decline are attributed to

reduced prices of lab-grown diamonds, showing that volumes are intact, and prices are resulting in lower export value. The average price per carat for LGD is US$198.22 for 10MFY24 whereas the price of natural diamond per carat is US$4357 for 10MFY24.

Table 1: Prices of Lab-Grown Diamonds

Months	FY22	FY23	10MFY24	Natural Diamond Price per Carat (10MFY24)
Average Price per carat	$238.21	$355.51	$198.22	$4357

Source: GJEPC, Industry Sources

India with more than 6,000 machines and reactors for producing LGDs, has increased its production capacity over the years. The cost of production of LGD has significantly reduced over a decade and going forward is likely to stabilize.

Key Market Influencing Factors

Growing adoption of lab-grown diamond jewellery domestically and globally is likely to help LGD players in long term. Increasing disposable income and aspiration of luxury goods are expected to support market growth.

The inherent purity and affordability of lab-grown diamond jewellery are expected to drive sales over the next decade. Supportive government initiatives will enable opportunities for lab-grown diamond manufacturers.

The burgeoning millennial population is likely to catalyse the expansion of the lab-grown diamonds market.

CareEdge Analytics and Advisory's View

"The LGD exports are expected to witness a revival in exports with expected growth of 7-9% to reach ~US$1500-1530 million in FY25. Faced with ongoing geopolitical and economic disruptions globally, the gems & jewellery industry is relying on the rapidly growing LGD market to mitigate the effects of low demand for natural diamonds. Due to low cost of man-made diamond, domestic consumption and exports are expected to increase in this fiscal." Tanvi Shah, Director, CareEdge Analytics and Advisory.

The lab-grown diamond industry has faced its own set of challenges. For instance, the supply of lab-grown diamonds has surged, leading to a significant drop in prices. However, the India-UAE CEPA will further boost the growth of this industry. For instance, Finance Minister Nirmala Sitharaman, in the Budget 2023-24, announced a reduction in basic customs duty on seeds used to manufacture LGD from 5% to NIL. This move was made to focus on the LGD exports from India among depleting natural diamond reserves. Besides, the depreciating rupee is likely to act as a cushion for this export-dependent industry. Good quality lab-grown diamonds with qualified certification, produced from the developed equipment and process parameters, will attract more foreign consumers. Thereby, reviving the export business.

Contact

Tanvi Shah	Director	tanvi.shah@careedge.in	+91 - 22 - 6837 4470
Amir Shaikh	Assistant Director	amir.shaikh@careedge.in	+91 - 22 - 6837 4400
Riya Vora	Analyst	riya.vora@careedge.in	+91 - 22 - 6837 4400
Mradul Mishra	Media Relations	mradul.mishra@careedge.in	+91 - 22 - 6754 3596

CARE Advisory Research & Training Ltd
(Wholly-owned subsidiary of CARE Ratings Ltd.)
A-Wing, 1102-1103, Kanakia Wall Street, Chakala, Andheri-Kurla Road, Andheri East, Mumbai- 400093
Phone: +91-22-68374400

Connect:

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