Graft Polymer (UK) plc

Completion and commissioning of Graft Polymer's new, bespoke production equipment in Slovenia is expected around end-July 2023. This will result in a doubling of the Group's production capacity. Supported by the granting of seven key polymer modification patents and the securing of Hazard Analysis and Critical Control Point ('HACCP') certification to enable commercialisation of its IP for bio/pharma applications, this will expand the Group's opportunity to deliver new product ranges along with improved response times across both its divisions. Having achieved its first operating cashflow positive month during 2022, on the back of GraftBio®'s receipt of a commercial scale drug delivery order from MGC Pharmaceuticals Limited (LSE: MXC), the Group's ability to find technical solutions, for what have previously been considered intractable problems, through innovation and collaboration is clearly its unique selling point. With a number of key initiatives expected to support its drive for continued product and sales growth through the remainder of this year and next, including plans to expand global reach through the establishment of new partnerships and distribution channels in emerging markets, the Board is now confident in its ability to satisfy the demands of this expanding, global market opportunity. Full year 2022 results released on 27 April 2023 noted that end-December cash/cash equivalents amounted to £1.64m; with the period's average monthly burn likely to have been sustained during H1 2023, any additional funding that could possibly be sought later this year will likely be directed toward marketing, profile raising and securing such longer-term, sticky contracts.

Development of new products and technologies

Graft is about to pass a key milestone at its Research, Development and Manufacturing facility in Slovenia. Following renovation and comprehensive installation of new capital plant at its premises, offices, laboratories and warehouse, along with hazard analysis and critical control points ('HACCP') and good manufacturing practice ('GMP') pharma room certification, the Group's unique and proprietary offering provides a competitive edge upon which the Board is confident it will build success in the coming year. Expected shortly to be capable of satisfying industrial-scale demand for modified polymers for the creation of cutting-edge composite materials, Graft is now seeking to accelerate growth by capitalising on an extensive existing commercial pipeline.

Utilising the c.£4.15m net proceeds raised in tandem with its January 2022 Admission, the doubling production line output at the Group's state-of-the-art 1,300m^2 and R&D facility to 6,000 tonnes/year in now in its final stages. This enables future IP registration along with both inventory and marketing opportunities, in anticipation of a rising level of customer enquiries, research projects and product sales. Importantly in this respect, Graft is an ESG focused and compliant company, which produces a special ECO line of compatibilisers (based on industrial clean scrap) for those demanding a high degree of recycled material in their throughput.

Along with additional cost efficiencies, this also reduces delivery times of finished goods to customers. The commissioning and operation of this new

Stock Data

Share Price:	2.80p
Market Capitalisation:	£2.91m
Shares in issue:	104.10m
52 week high/low:	16.03p – 2.78p

Company Profile

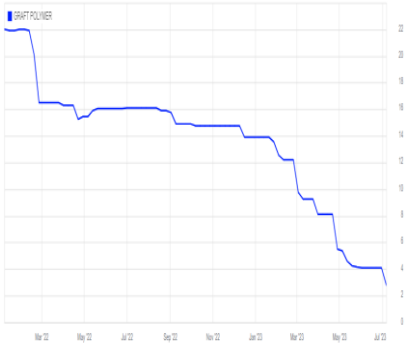
Sector:	Chemicals
Ticker:	GPL
Exchange:	LSE Standard Listing

Activities

Graft Polymer (UK) plc ('Graft Polymer', 'Graft', 'GPL' or 'the Group') is a specialty chemical business with an extensive portfolio of modified polymer solutions based on proprietary production methods.

www.graftpolymer.com/

Share price performance since Admission*



*6 January 2022

Source: *LSE*

Past performance is not an indication of future performance.

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production line and research & development equipment should ensure Graft Polymer remains well positioned to continue its pioneering and market leading research/technology commercialisation in the polymer modification, biological supplements, and drug delivery systems industry. The new key equipment includes:

- **Multi -Functional Vacuum Infusion Reactors –** For the creation of Polymef Nano-Composite by Nano Infusion Technology and drying porous granules.
- **Custom-made equipment for manufacturing of high-quality Nanoemulsions for Drug Delivery Systems and Bio Supplements** – This equipment will allow the Group's GraftBio® Division to deliver higher-level advanced Bio/Pharma manufacturing solutions based on Graft Polymer Drug Delivery Systems developments.
- **Ozone/Plasma Polymer Modification module** – This equipment offers potential to transform current methods of fluoropolymers modification, which can be expensive, unsafe, and environmentally unfriendly. Once proven, the Ozone/ Polymer Modification module could represent an important and profitable step forward for the fluoropolymer sector, introducing higher industrial scalability and a more efficient production process. It is currently anticipated that two major classes of products can be modified; the first being powder coatings for use in responsible applications where high chemical resistance is a priority and; the second in [nano]alloys to increase abrasion and temperature resistance, impact strength while reducing friction coefficient.

Graft Polymer is expected to be the first to deliver such an advanced product which, assuming capacity of 200kg per hour, will provide it with a first-mover advantage over competition while potentially opening new revenue streams in the long term.

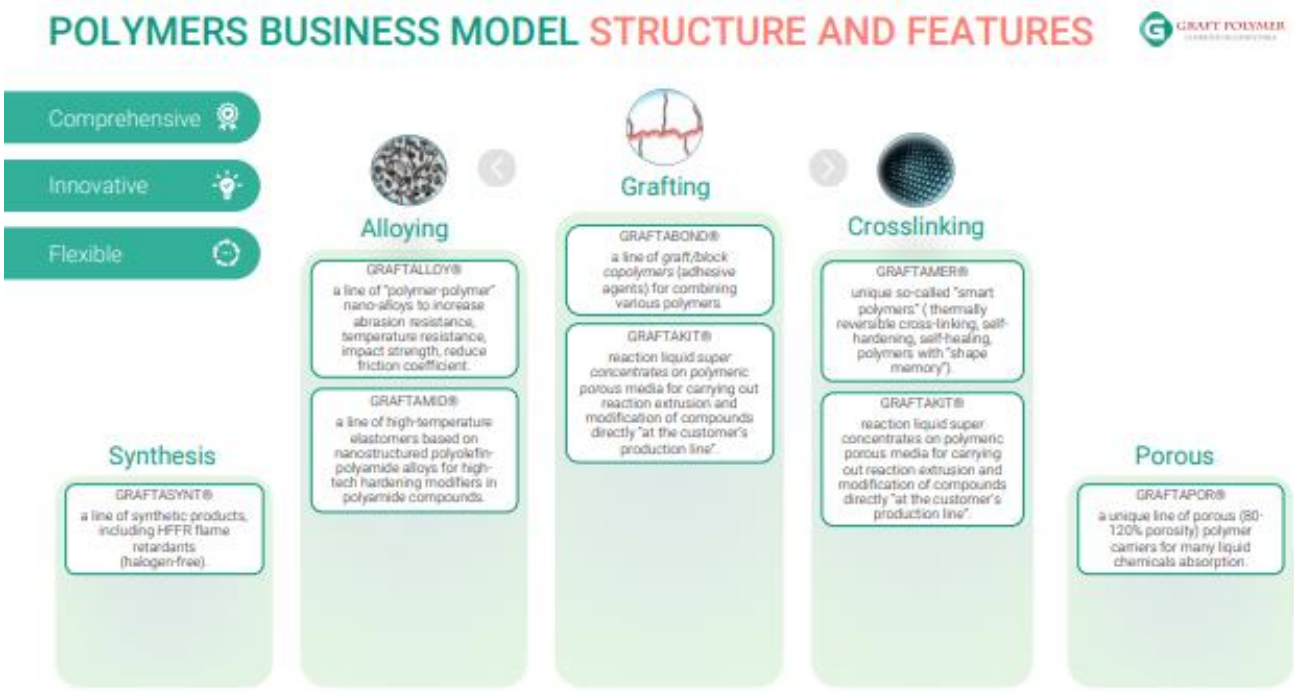
Graft Polymer's EU Production Facility – Full Commissioning Expected in July 2023

Source: Graft Polymer, Investor Presentation, March 2023

Graft Polymer's 2022 Commercial Progress

- Won first revenue generating commercial order for 50,000 units of MGC Pharmaceuticals product, ArtemiC™ Rescue on 18 August 2022, which uses the Group's GraftBio® proprietary drug delivery system;
- December 2022 saw Graft Polymer's strongest month of sales in the year which followed month-on-month sales growth in 2022. The pipeline for 2023 is looking healthy as it seeks to capitalise on the enlargement of its operations with larger mandates;
- Expansion into the cosmetics industry through the receipt of a small-scale commercial purchase order to the Group's GraftBio® division, demonstrating our ability to meet rigorous cosmetic testing requirements.

Industrial-scale polymer modification & drug delivery platforms



Source: Graft Polymer, Investor Presentation, March 2023

Graft Polymer supplies three distinct polymer product ranges: Standard, Custom & Innovative

The Group provides its customers with three main types of modification solutions, as follows:

- Graft/Block copolymers used as compatibilisers to combine various immiscible components (polymers, fillers) allowing the creation of high quality polymeric composite materials for multiple applications;
- Polymeric Nano-Structured Alloys used to modify virgin polymers or as stand-alone compounds; and
- Crosslinking Masterbatches/Alloys to modify virgin polymers or as stand-alone compounds.

In late 2018, the Group began its first commercial sales to various polymer compounders in the automotive, packaging, construction, consumer products, clothing, aerospace, healthcare and medical markets. Its current product offering falls into the following categories:

1. **The standard products range** – These are products that the consumer market is familiar with, for use in the most developed polymer sectors such as Polypropylene-based composites (which accounts for approximately 70% of the polymer market and Polyamide-based composites (which accounts for approximately 20% of polymer market), as well as other composites (including styrene, polyesters and peroxide masterbatches). These products are available on demand and are distributed via the Group's distribution networks; adapted to align with the market standards and do not require a special validation process by the client.

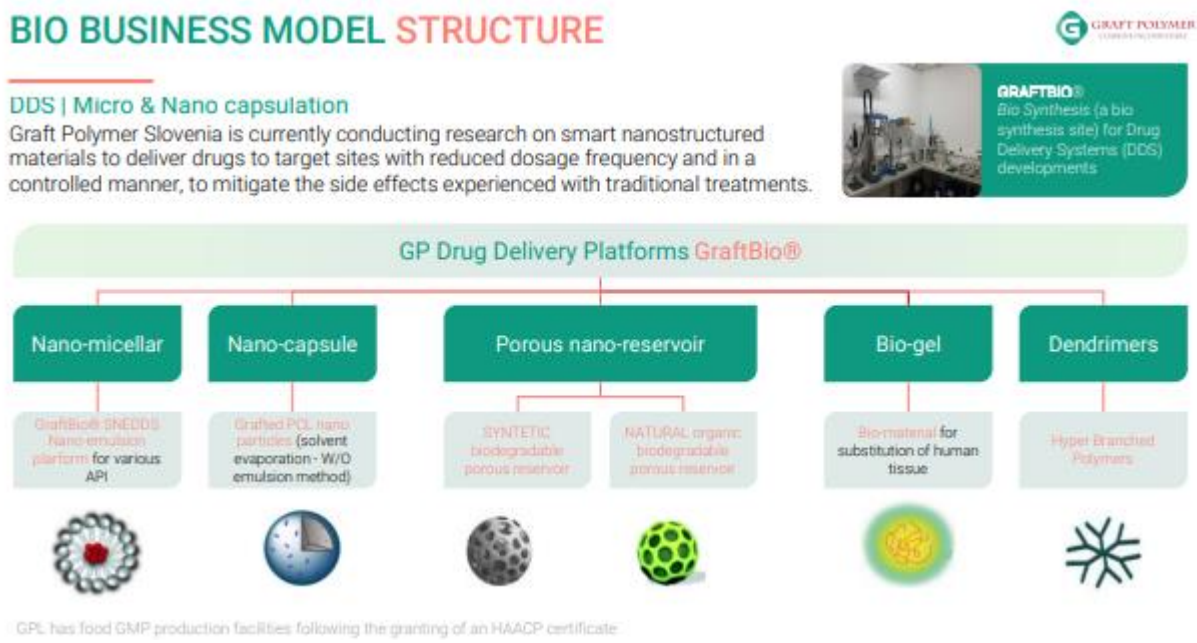
    - Multifunctional coupling agent ('CA') based on PP.
    - Impact Modifiers for PA, PET, PBT.
    - Coupling Agent for Wood Plastics Composites.
    - Adhesives & Sealants Market.
    - Multifunctional Modifier for composites that include fillers, ATH/MH, scrap.
    - Multifunctional Compatibilizer for bitumen, films, Scrap, IM for PET/PBT.
    - Peroxide MB: for melt Flow regulator in the PP Market.
    - Synthetic Products

2. **Custom-made Polymers** – These are 'standard' products with slight modifications made to satisfy specific requests from customers. The Group works directly with its customers to enhance existing products offered by its customers or produce new products that complement the customer's product range.

3. **Innovative Products** - These products are usually the result of the Group's R&D projects, being either initiated by the Group based on its market research, or as a result of a specific brief from a customer, as follows:

    - **GRAFTALLOY** - A line of 'polymer-polymer' nano-alloys to increase abrasion resistance, temperature resistance, impact strength, reduce friction coefficient.
    - **GRAFTAKIT**- Reaction liquid super concentrates on polymeric porous media for carrying out reaction extrusion and modification of compounds directly 'at the customer's production line'.
    - **GRAFTAMER TRC** - Unique so-called 'smart polymers' (thermally reversible cross-linking, self-hardening, self-healing, polymers with 'shape memory').
    - **GRAFTAMER VTR** (In development status) – New type of polymers - short cycle times, transport at room temperature, recyclable.

Broadening of product offering to also include bio/pharma and drug delivery systems



Source: Graft Polymer, Investor Presentation, March 2023

In 2020, the Group launched a new division, GraftBio®, to develop IP for bio/pharma applications, including a drug delivery system ('DDS') to support and provide solutions to the market that had been heavily impacted by the COVID-19 pandemic, in order to accelerate growth in the infectious diseases segment of the industry. Research focusses on smart self-emulsification nanostructured materials to deliver plant-derived bio and pharmaceutical active substances drugs to the target sites, with the principal aim of reducing dosage frequency and mitigating side effects experienced with traditional therapies. Back then, the division did not have its own manufacturing facility and therefore engaged in development and licensing/sale of IP for various platforms relating to the wellness (food and cosmetics) and pharma industries.

The Group's novel and patented micelle technology encapsulates the particular substances in the tiniest, completely homogeneous individual parts in the shape of product. Important agents are no longer discharged broadly unused, but release their complete and planned effect by making active agents water-soluble. This method enables new potential in both the nutritional supplement and pharmaceutical markets.

The self-nano emulsifying drug delivery system ('SNEDDS') contains all API components as the lipophilic core of a micelle with emulsifiers/co-solvent and stabiliser excipients as a shell in the aqueous phase, with a globular micelle size below 50 nm.

Having installed its first production line, in January 2022 the Group secured HACCP certification followed by a GMP food production licence to enable B2C commercialisation of its IP for biosupplement/pharma applications. More recently it has installed a bespoke GraftBio® product line, magnifying its potential throughput, that is expected to be fully commissioned in July 2023.

Initial customers achieve positive results from several of their own products that were based on the GraftBio®'s DDS IP. On 16 June 2022, MGC Pharmaceuticals licenced Graft Polymer's drug delivery platforms in the development of CimetrA™ (a treatment for hospitalised patients diagnosed with COVID-19) and CannEpil-IL™ (an add-on treatment in children and adolescents with treatment resistant epilepsy, also known as refractory epilepsy) products, confirming that it has undertaken studies relating to the application of a base formulation nano delivery system founded on GraftBio® IP, to improve the bioavailability of the active compounds using a non-invasive drug administration process. The study examined the toxicity of the base emulation to confirm its safety profile for potential use in future clinical research.

As well as highlighting Graft Polymer's role as a critical partner for MGC as it progresses its products through to commercialisation with potential to generate substantial future royalties, this news also significantly raises the profile of the Group's successful delivery platform technology to the wider drug development industry with potential for it to similarly participate in clinical research.

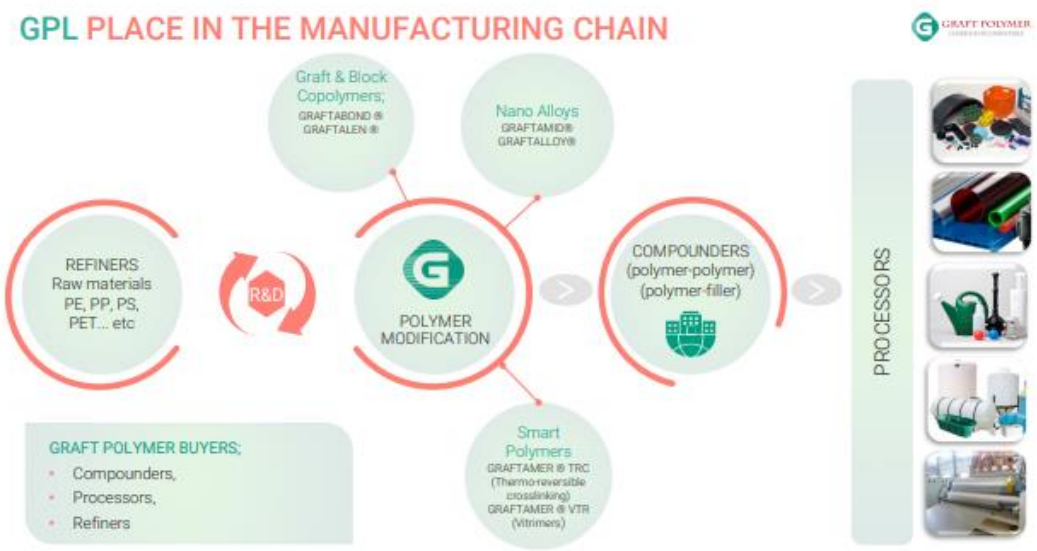
Following this, on 18 August 2022, Graft Polymer won its first revenue generating commercial order for 50,000 units of MGC Pharmaceuticals' product, ArtemiC™ Rescue which also uses GraftBio®'s proprietary drug delivery system. This drug has gone on to be listed as an over-the-counter drug on the US Food and Drug Administration's National Drug Code Database ('NDC'), enabling sales in the US.

Marketing specialist polymer products to refiners, compounders and processors

As a commercial supplier of polymer modifiers, the Group sells products to refiners, compounders, and processors.

- ***Refiners***: Are typically large enterprises who produce virgin polymers as commodities: polyethylene, polypropylene, polyamide, etc. They often seek to upgrade their existing product portfolio or to develop some innovative grades. Typically, they apply to Graft Polymer, who in turn provides them some modifiers or masterbatches to add during their process to increase monomer content, raise modulus, increase MFI (melt flow index, relevant in processing), or improve other properties, etc.
- ***Compounders:*** Are direct customers of Graft Polymer. Compounders routinely produce composites, mixtures of virgin polymers, modifiers and/or fillers.
- ***Processors:*** composites are supplied to such parties, who produce finished or intermediate products, such as injection or compression moulded structures, pipes, blown films and packaging, etc.

Graft Polymer has positioned itself in the manufacturing chain as follows:

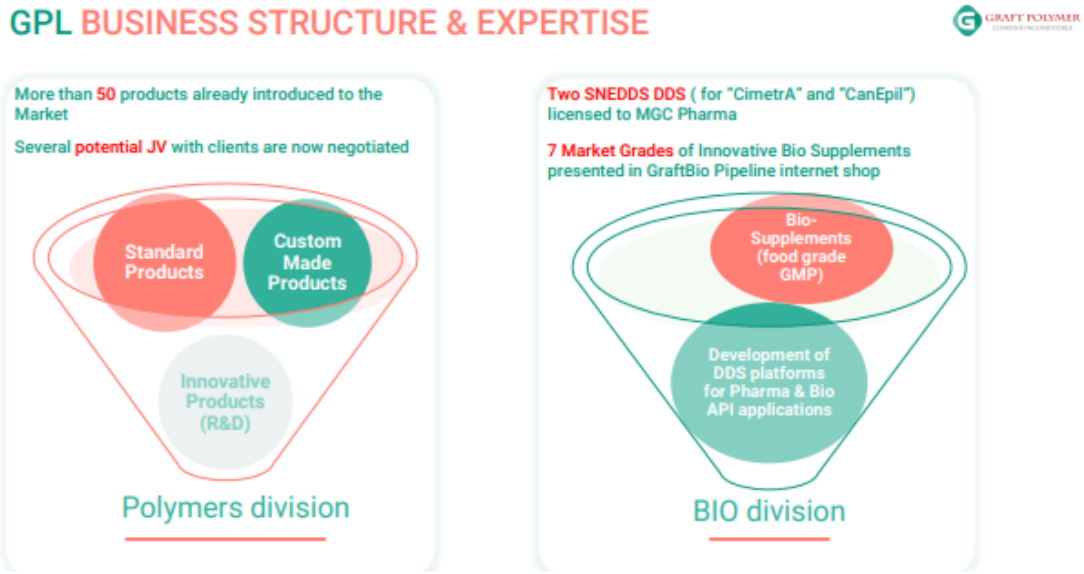


Source: Graft Polymer, Investor Presentation, March 2023

Intellectual Property & R&D

Graft Polymer seeks patents for its proprietary products is in line with the Group's layered IP strategy. Seven patents awarded during the FY 2022, including:

- FIPO 2765946, covering supersaturated self-nano-emulsifying drug delivery system for slightly water-soluble pharmaceutical compositions and method for its preparation;
- SIPO 26054, covering super-saturable oil-free self-nano-emulsifying drug delivery system for poorly water-soluble pharmaceuticals composition and procedure of preparation thereof;
- SIPO 26056, covering self-emulsifying concentrate of cannabinoid-ionic complex and method for its preparation;
- SIPO 26070, covering the method for industrial production of modified polymers and device for its realisation; and
- SIPO 26071, covering the method for production of a modified polymer.



Source: Graft Polymer, Investor Presentation, March 2023

Product strategy for 2023 and 2024

The past year of investment has resulted in Graft doubling production capacity while enhancing its competitive edge enhanced through establishment of new partnerships/distribution channels in emerging markets. This now positions it to target larger industry customers with its unique and proprietary offering. For 2023 and 2024, strategy is for current standard throughput to gradually be replaced by a much higher value-added, protected and necessarily sticky product pipeline. This includes:

1) Grafted Fluoropolymers powders (PVDF, PTFE)

2) Alloys based on Modified PVDF and Engineering Plastics (PA and PET/PBT)

- Graftalloy F series: Hot Ozone/Plasma Module with Nauta Reactor

3) Nano-Infused Polymer Composites

- Nano-fillers can be infused up to 20% (SiO2, TiO2, V2O5, Ag, Pd, CNT, Graphene etc.)
- Multi-Functional Double Cone Vacuum Reactors

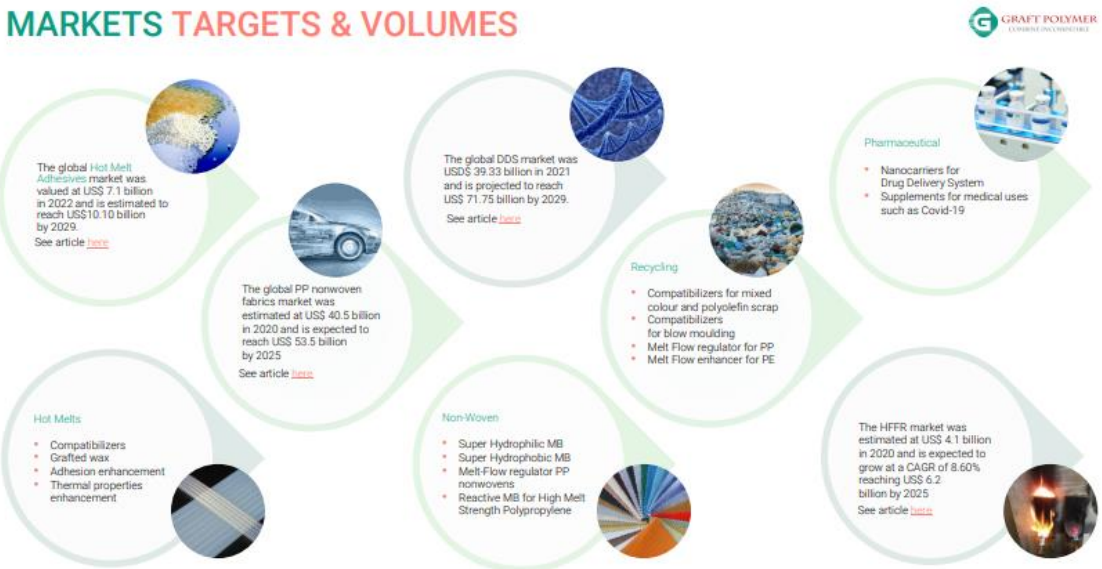
4) Conversion of Graphite into Graphene Oxide

- Solvent-free method of converting Graphite into Nano-Graphene
  - a) Treatment of Graphite with Ozone
  - b) Sonification of Graphene to Nano-Graphene

Global market opportunity

Graft Polymer address subsets of two very large global markets populated by international majors. According to Prescient & Strategic Intelligence, for example, the global polymer market was valued at US$590 billion in 2021 and is expected to expand to US$947 billion by 2030, based on a CAGR of 5.4% over the nine-year period. This is based on increasing demand for products in end-use industries, including packaging, automotive and electronics.

Elsewhere, according to DataM market research report published in November 2022, the global drug delivery devices market size was valued at US$78.09 billion in 2021 and is estimated to reach US$124.83 billion by 2029, growing at a CAGR of 5.6% during the forecast period (2022-2029). It recognises that continuing advances in drug delivery will help to facilitate the targeted delivery of drugs while mitigating their side effects, while key drivers include growth in metabolic disorders and pharmaceutical companies seeking innovative solutions to enhance patient compliance and/or extend existing drug patent protection.



Source: Graft Polymer, Investor Presentation, March 2023

Competition includes a large number of regional and global polymer modification groups

Although the Group is relatively new within the polymer modification field, it considers it is able to compete with larger and more established corporations as a result of its ability to focus its resources, research and development on developing cutting-edge production methods, compared with larger corporations that lack the same specialist focus. This allows Graft Polymer to be flexible and agile compared with its competitors in a market that is constantly evolving. As such, this allows it to offer a wider range of solutions than a peer group which tend to limit their offering to a relatively small number of standard products.

This peer group includes a number of regional and global polymer modification players, many of them subsidiaries of larger petrochemical or specialty chemical groups. These include Polyram (Israel); Auserpolimeri (Italy); BYK (Germany); ExxonMobil, Dow and Dupont (USA); Arkema (France); Silon (Czech Republic); Pluss (India); and Fine-Blend (China). The Board considers that the products and solutions offered by each of these companies is significantly narrower than its own; refer to Appendix 3.0 for its comparative analysis by location of relevant competition.

Moreover, it should be noted that the complexities of establishing a business within the polymer modification and related sectors (which include the technical experience required, the extensive length of time taken to develop such technologies and the founding experience/contacts), it is uncommon for wholly new companies to enter this market area. It is more likely that operators will instead acquire businesses already operating in the sector. Numerous examples of this can be found, including SK Global Chemical acquiring one unit working on grafted materials from Arkema and BYK-Chemie GmbH acquiring the modified polymers brand, 'Scona'. As such, the Group considers that its competitors are primarily amongst those listed above and that future competition is most likely to arise from mergers, divisional acquisitions and/or spin-outs from those already successfully competing within the sector.

As can be seen below, Graft Polymer's most obvious peers tend to specialise in a small number of key polymer technologies. While such concentration presents such operators with opportunity to secure economies of scale, it fails to provide prospective customers with the 'one-stop' solution they routinely seek to overcome otherwise routinely identified, intractable problems. Utilising its Proprietary Initiating Systems and with access across a wide range of capabilities, the Group finds itself uniquely positioned in production of the most sophisticated modifiers known to the industry.

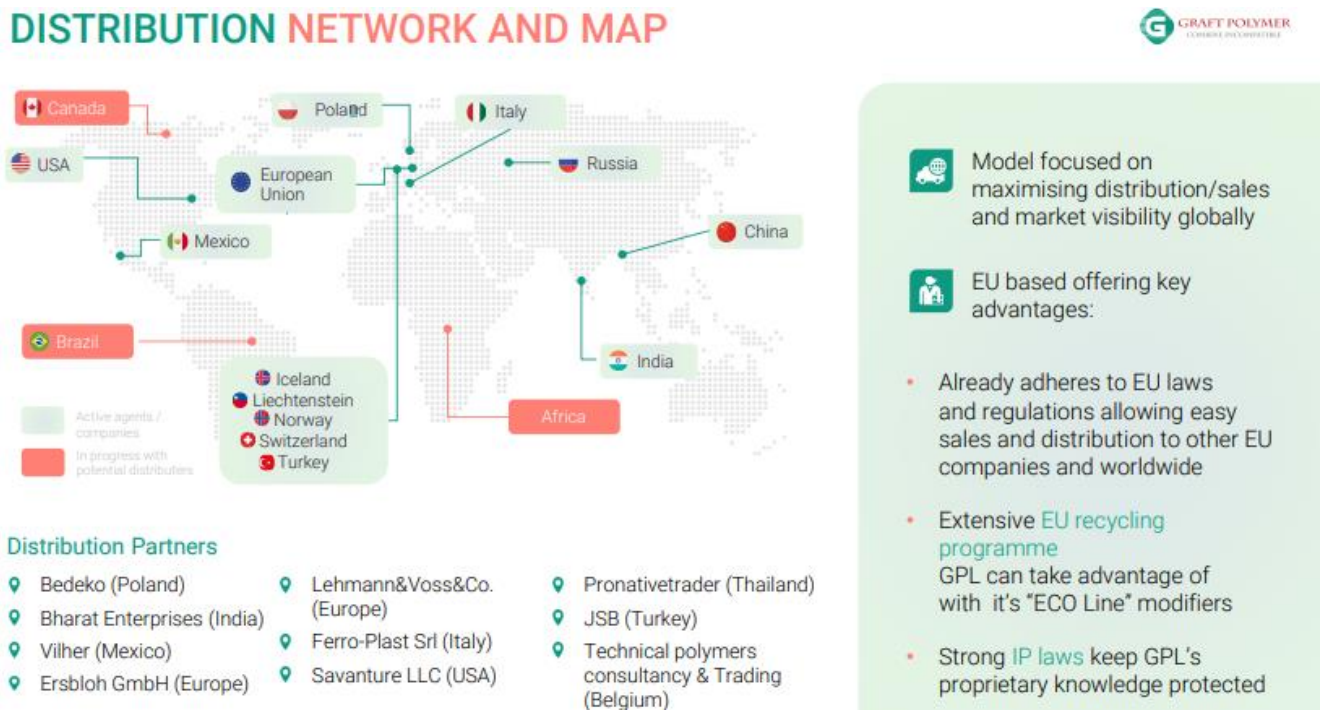
GPL COMPETITIVENESS

TECHNOLOGIES	Slovenia	Israel	Italy	Germany	USA	DuPont	France	Czech	India	China
Flow induced crystallization	✓									
Solid Phase Grafting	✓			✓						
Solution Grafting	✓				✓	✓	✓			✓
Fillers Treatments	✓									
Powders Hybridization	✓						✓			
Hot ozonolysis/plasma mod.	✓									
Nitroxide Mediated Polymerization	✓						✓			
Reactive extrusion	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alloying	✓	✓				✓	✓		✓	
Crosslinking	✓					✓		✓		
Micro/Nano Porous polymer	✓									

Source: Graft Polymer, Investor Presentation, March 2023

Distribution relationships with multiple international partners

In addition to its direct sales to customers, the Group has secured distribution relationships with multiple international partners, including distributors/agents in Europe, India and Russia. These provide critical channels to market for the polymer modifier industry, providing quality assurance for potential customers as well as market volume. The Board expects to be able to secure similar arrangements with further distributors in North America and other international territories in the near future.

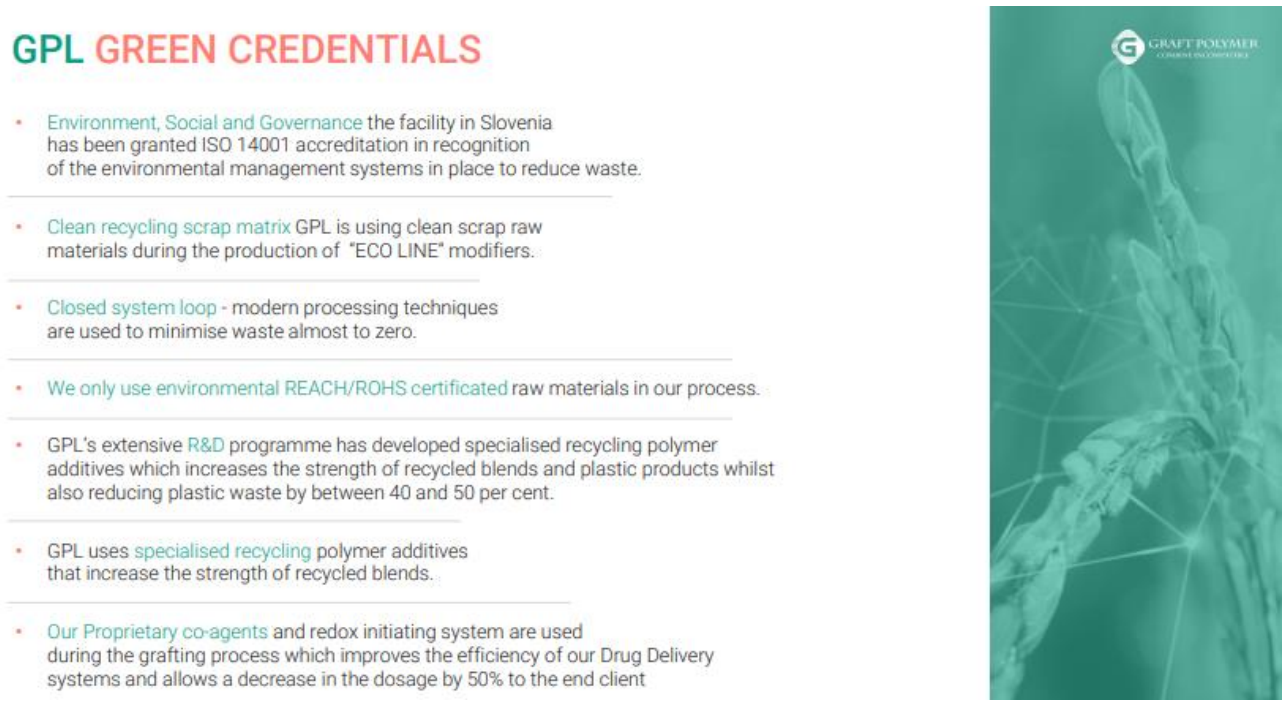


Source: Graft Polymer, Investor Presentation, March 2023

Source: Graft Polymer, Investor Presentation, March 2023

Graft Polymer's focus on green credentials

Graft Polymer's Slovenian facility has been granted ISO 14001 accreditation in recognition of the environmental management systems in place to reduce waste, with the closed-loop processing technique minimising waste to almost zero. The Board continues to place considerable emphasis on achieving the highest possible environmental and performance standards.



Source: Graft Polymer, Investor Presentation, March 2023

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