EDISON

MagForce

Outlook for 2020/21

Striding towards major inflection points

Healthcare equipment & services

MagForce, a pioneer in nanotechnology-based cancer treatments, is making steady progress with its strategy to drive the uptake of its thermal ablation treatment, NanoTherm. In Europe NanoTherm is approved for glioblastoma (brain tumours) and while sales started slowly ($0.87m in FY19) MagForce saw considerable growth uplift during Q120 as it benefits from establishing new treatment centres in Germany and Poland (with expansion to Italy and Spain expected in 2021). For FY20 MagForce expects an increase in European glioblastoma patient numbers treated with NanoTherm. In the US NanoTherm is now in the final phase of the registrational study for prostate cancer; approval and launch are now expected in Q221. These indications could be the catalyst for meaningful growth in the top line and the path to sustainable profitability, which we forecast for 2022. We value MagForce at €269.1m.

Year end	Revenue (€m)	PBT* (€m)	EPS* (c)	DPS (c)	P/E (x)	Yield (%)
12/18	0.1	(8.7)	(32.8)	0.0	N/A	N/A
12/19	0.8	(7.7)	(28.3)	0.0	N/A	N/A
12/20e	1.1	(12.0)	(43.2)	0.0	N/A	N/A
12/21e	4.9	(6.2)	(22.2)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

US NanoTherm approval expected in Q221

MagForce received FDA approval to proceed with its streamlined trial protocol for the next stage of its pivotal US NanoTherm clinical study in prostate cancer. This means patients can receive treatment in an outpatient facility within one day (NanoTherm particle installation in the prostate and activation) rather than weeks previously. MagForce will enrol up to 120 patients to establish efficacy in thermally ablating prostate cancer lesions and believes that it will have sufficient data to achieve 80% confidence that clinical objectives have been met by end Q420. This should enable commercial preparations for a Q221 launch to start while the trial concludes.

European rollouts imperative

MagForce's expansion strategy is to install NanoActivators at new treatment centres in Europe; this is vital for accelerated growth in the top line. Q120 saw significant treatment numbers of glioblastoma patients and management expect an increase in the number of commercial treatments by 800% to 45 patients (FY20). A NanoActivator has now been installed in Poland where, unlike Germany, payments are less dependent on reimbursement from insurers. MagForce aims to establish an efficient reimbursement procedure in Germany this year.

Valuation: €269.1m (€9.7/share)

Our revised valuation of MagForce is €269.1m (previously €303.1m), based on a risk-adjusted NPV analysis. We have updated FX and rolled forward our model, which has delayed US NanoTherm launch by one quarter to Q221. We note that delays in the US trial would materially affect our valuation, and prudent execution is needed to launch the asset on time (the US is ~70% of our valuation).

20 July 2020

Price	**€3.08**
Market cap	**€85m**
	$1.13/€
Net debt (€m) at 31 December 2019	16.5
Shares in issue	27.7m
Free float	70%
Code	MF6
Primary exchange	Frankfurt (Xetra)
Secondary exchange	N/A

Share price performance

%	1m	3m	12m
Abs	(6.2)	15.1	(38.4)
Rel (local)	(10.1)	(5.3)	(41.1)
52-week high/low		€5.00	€2.24

Business description

MagForce is a German firm with the first Europe-approved nanotechnology-based therapy to treat brain tumours. NanoTherm consists of a nanoparticle instillation into the tumour, activated by an alternating magnetic field, producing heat and thermally destroying or sensitising the tumour.

Next events

Additional NanoActivator installations in Europe (ex-Germany)	2020
FDA approval and launch of NanoTherm in the US	Q221

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Edison profile page

MagForce is a research client of Edison Investment Research Limited

Investment summary

Company description: US trial execution is key

MagForce has a unique medical device, NanoTherm, which is approved in Europe by a CE mark for treating brain cancers. Unlike other thermal ablation techniques, NanoTherm is designed to directly target cancerous tissue while sparing surrounding healthy tissue. Magnetic nanoparticles are directly instilled into a tumour or a resection cavity and activated by an alternating magnetic field generated by specialist equipment (NanoActivator). This can either thermally ablate tumours or sensitise them to other treatments (chemotherapy or radiotherapy). NanoTherm is approved in Europe for recurrent glioblastoma multiforme (GBM). In the US, its lead indication is for prostate cancer; the next stage (stage 1 has completed) of the pivotal trial is underway and management guides for NanoTherm launch in Q221 (previously Q121). The US prostate cancer indication is a significant value driver for MagForce in the long term. With proof of concept increasingly being established in glioblastoma and prostate cancer, NanoTherm's utility could be extended to other localised, solid tumours with no metastasis and confirmed by target biopsy.

Valuation: Risk-adjusted NPV of €269.1m or €9.7/share

Our valuation is €269.1m or €9.7/share, based on a risk-adjusted NPV analysis, which takes into account the €16.5m net debt held in MagForce at the end of December 2019, and net cash held in MagForce USA, which is not specifically disclosed in the financial statements but we estimate at €2.0m based on the gross proceeds from the capital raise in December 2019. We present a base case in both the EU and the US focusing on GBM and prostate cancer, respectively; our rNPV is heavily weighted (~70%) to the US, with an 80% risk adjustment.

Sensitivities: US execution and delivering growth in Europe

MagForce is subject to the usual risks associated with product development in healthcare, including clinical trial delays or failures, regulatory risks, competitor successes, partnering setbacks, financing and commercial risks. In the near term, the timely execution of the US trial and obtaining FDA approval for NanoTherm will be critical. Likewise obtaining reimbursement for NanoTherm will be essential to achieving uptake in treatment sales. In addition, progress with the ongoing negotiations to establish new treatment centres in Europe and delivering on commercial revenues will help to increase confidence in management's target to attain sustainable profitability in 2022.

Financials: Loan facilities in place until profitability in 2022

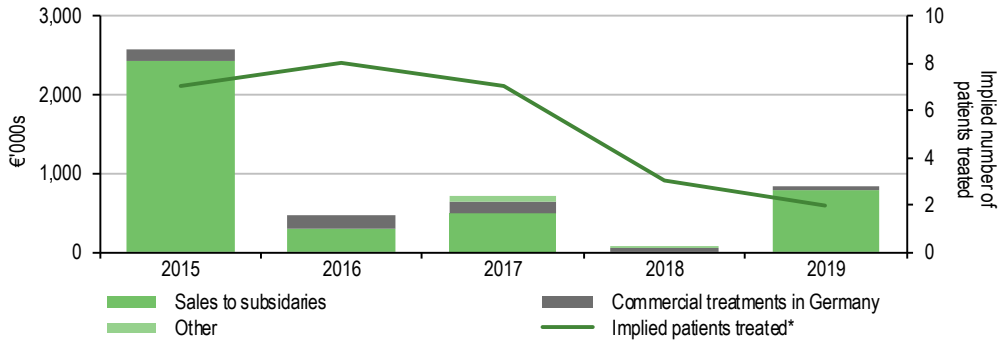
MagForce AG reported revenues of €0.84m in FY19 (€0.07m in FY18), reflecting treatments in both Germany and Poland. Other operating income was reported at €0.9m in FY19 (FY18: €14.9m). The prior year benefited from the extraordinary transfer of 975,000 shares in MagForce USA to MagForce USA Holding GmbH and the consequent booking of hidden reserves of €13.9m at the parent company level. Reported operating income in FY19 stated a loss of €6.2m (vs profit of €6.8m in FY18). While we expect an uptick in the sales trajectory in 2020 and 2021, this will not be enough to compensate operating expenses, so we continue to expect operating losses in 2020 and 2021. After this we forecast sustainable profitability from 2022 with operating margins of c 50%. MagForce reported 31 December 2019 net debt of €16.5m, primarily from drawing down the first tranche (€10m) of the loan from its facility with the European Investment Bank (EIB) (€25m remaining). MagForce raised gross proceeds of €5m in a private placement of 1.2m shares (in June 2019). MagForce also has access to up to €15m of growth financing via zero interest bearing convertible notes through a post period agreement with Yorkville Advisors Global signed in June 2020. We note the $4.5m capital increase (through the issuance of 292,200 shares) of its US subsidiary MagForce USA in December 2019 from Lipps & Associates (principle owner is CEO Ben

Lipps), which will ensure funding for the US prostate cancer trial. The issuance of these shares reduces MagForce AG's holding in MagForce USA from 67.9% to 65.3%. We believe an additional €25m will be required to fund operations until profitability, which we forecast in 2022. We note that as per the company accounts, we do not consolidate the US into our financial model; however, we do include our assumed R&D, S&M and potential future sales revenue of MagForce USA in our valuation.

Two-pillar strategy to translate to profitability in 2022

MagForce has a two-pillar strategy to drive uptake and adoption of NanoTherm in key European markets (for glioblastoma) and the US (for prostate cancer), which should start to enable meaningful top-line growth during 2020/21 and build the foundations to achieve sustainable profitability from 2022. Although commercial treatments with NanoTherm have been ongoing since 2015, their contribution to the reported operating result has not grown materially in the four years since launch; the breakdowns highlighted in Exhibit 1 imply that MagForce has only been fully remunerated for the treatment of c 30 patients. The revenue from the three patients treated at the treatment centre in Poland in FY19 are incorporated into the sales to subsidiaries bar. However, with the establishment of additional centres (Germany and Poland) during FY19 and post period, management believes it is on track to reach the goal of increasing patient treatments by ~800% in 2020 (vs 2019), implying 45 patients. The roll-out of devices into the broader European market (ex-Germany) should stimulate an increase in treatment sales. MagForce will be targeting territories where reimbursement will not present as big a hurdle, as management has guided that more patients in these countries are willing to pay 'out of pocket' (€23k) for NanoTherm until reimbursement from payers can be negotiated. MagForce will also be looking to increase patient throughput in existing treatment centres. Assuming an operating expense run rate similar to 2021 (c €10m), in order to break even in 2022 which we believe is achievable, based on our current forecasts MagForce will have to treat c 300 GBM patients in Europe and c 450 prostate cancer patients in the US.

Exhibit 1: Breakdown of reported revenues



Source: MagForce accounts, Edison Investment Research. Note: *Based on the assumption that treatment costs around €23k.

Polish treatment centre established, next up Spain and Italy

During FY19 MagForce announced the establishment of its first treatment centre outside of Germany in Lublin, Poland. This has marked an important moment for the company as it is a clear signal that MagForce is progressing in its plans to broaden its geographical coverage and enables it to provide NanoTherm to patients previously unable to travel into Germany. In June 2019, an agreement was made with the Paracelsus Clinic in Zwickau, Germany, to establish a new treatment centre, which has broadened MagForce's geographical coverage further, although treatments are

still likely to consist of private paying patients until reimbursement in Germany is attained (expected in 2020). Notwithstanding the impact of COVID-19, we expect MagForce will continue with its strategy for its European roll-out; we expect the installation of two NanoActivator devices a year in new markets. We estimate that c 4,000 deaths a year can be attributed to GBM in Spain and Italy during 2018 (source: Global Cancer Observatory), markets that management has highlighted it is looking to expand into next and management is in negotiations with neurosurgical units to establish new treatment centres (expected in 2021). Post period in March 2020, MagForce and Hufeland Klinikum GmbH announced a cooperation agreement and the opening of a new NanoTherm treatment centre at the Mühlhausen site in Thuringia, Germany, which is expected to open in Q320. This will take the number of treatment centres in Germany to four, further expanding MagForce's coverage of the region.

European sales forecasts

Our forecasts for Europe are based on the number of NanoActivators that MagForce could install in both Germany and other European states, along with clinical uptake based on usage per device. With the first devices in Poland installed in April 2019, and installations on the cards in Germany (two more by year end 2020) and in Italy and Spain in 2021 (COVID-19 restrictions permitting) we forecast that MagForce will have nine fully commercial treatment centres established by end-2021. We have reviewed our forecasts and have changed our sales trajectory to reflect two additional NanoActivator installations in Germany, and one less ex-Germany. Our estimates for peak sales are outlined in more detail in Exhibit 4 but are based on annual roll-out of ~two devices per year (ex Germany), with usage ramping up to 150 patients treated per device at peak usage in 2025. We expect that MagForce will maintain its competitive pricing at c €23k per patient, irrespective of geography, given the comparative cost of chemotherapy is around the same.

US prostate cancer launch expected in Q221

NanoTherm therapy is regulated as a device rather than a drug in the US, and therefore follows a medical device regulatory route to approval. Following receipt of an IDE from the US FDA, in July 2018 MagForce initiated its pivotal prostate cancer trial across two clinical sites where NanoActivators are installed (University of Washington in Seattle, Washington, and CHRISTUS Santa Rosa Hospital in San Antonio, Texas). During 2019, MagForce completed treatment of the first 10-patient cohort in its pivotal prostate cancer study required by the US FDA for approval. The company reported that initial findings shown in Stage 1 were encouraging, demonstrating a favourable safety and tolerability profile, as well as well-defined ablation and cell death in the region of the nanoparticle deposit. This led to FDA approval of a streamlined trial protocol (parts of which will be patented) for the next stage, which means patients can receive treatment in an outpatient facility within one day (NanoTherm particle installation in the prostate and activation) rather than weeks previously. This is achieved by increasing the viscosity of the NanoTherm solution by 100 times, allowing it to remain at the reverse biopsy instillation site, providing sufficient time for NanoTherm conjugation to occur, stabilising the NanoTherm particles in the clinical targeted volume (of less than 2 to 4 cc). Enrolment will take place at three established urological clinics in the US (in Texas, Washington and Florida).

MagForce will enrol up to 120 patients with prostate cancer to establish efficacy in thermally ablating prostate cancer lesions with minimal side effects, in order to demonstrate efficacy as defined by no recurrence of tumour in a follow-up biopsy. It is anticipated that by destroying these cancer lesions, patients will be able to remain in active surveillance programs and can avoid the well-known side effects of definitive therapies such as surgery or whole gland radiation as long as possible. Post period in H120 the first patients were enrolled into this study. In lieu of a control arm in the study, we assume that it will be compared to historical standard of care treatment outcomes to determine its benefit (similar to the GBM trial). Although this might be sufficient to achieve

regulatory approval, payers might require a clearer measure of patient benefit before agreeing reimbursement; management has guided that, in its initial engagement with the Centres for Medicare & Medicaid (CMS), it has indicated efficacy in line with brachytherapy and tolerability in line with a biopsy could warrant similar reimbursement (c $7k). With a relatively quick turnaround time in determining whether the primary endpoint has been met (biopsy to confirm reduction of prostate cancer lesions), a six- to nine-month timeframe to complete the second stage of the trials is conceivable; provided that trial recruitment proceeds as planned, approval and launch in Q221 is now planned (slight slippage from the previous Q121 due to COVID-19's initial impact on recruitment). We forecast peak sales of $265m in 2026.

During 2020 MagForce intends to continue to develop the smaller pNanoActivators that it plans to roll-out into urology centres in the longer term. This device could be approved via the 510k route using the original NanoActivator as the predicate device. Initially we expect US prostate cancer patients to be treated in the established NanoActivators, but our forecasts are based on the smaller ambulatory devices being rolled out across the US. While the GBM indication is reliant on the larger NanoActivators for activation of the NanoTherm nanoparticles, more localised prostate cancer can be treated by the pNanoActivators (smaller ambulatory machines that resemble a dentist's chair), thereby widening outreach to the US patient pool in the longer term.

US sales forecasts

We now assume regulatory approval and first treatment sales from the US during Q221, assuming no additional delays are encountered that would affect recruitment and execution of the second stage of the study (efficacy in up to 120 patients). MagForce is still hopeful that the COVID-19 pandemic will not cause significant delay beyond 2020 to complete this single-arm clinical trial. Initial sales in the US will stem from the five NanoActivators that will be in place by end 2020. We assume that all future device sales will be smaller and substantially cheaper (c $50k) pNanoActivators. We have pushed back our expectations and forecast ~40 pNanoActivators are installed by Q422, and we assume that each prostate NanoActivator will initially treat around 30 patients in 2021. As a smaller quantity of nanoparticles will likely be required in prostate cancer, we assume a lower vial price of around a quarter of GBM, ie around $7k, which would position NanoTherm competitively with brachytherapy. Obtaining reimbursement will be key if treatment sales are to pick up in the US. We have revised our fundamental assumptions for the roll-out of devices and their peak usage, but our estimates for peak sales of $265m remain in line with our previous forecasts. Our assumptions are outlined in more detail in Exhibit 4, but we assume the installation of 150 devices with 250 patients treated per device at peak usage in 2026 (or 37,500 patients).

NanoTherm

The treatment of cancerous cells with heat (hyperthermia) is an established technique, which looks to heat tumour sites and elevate tissue temperatures above the body's native temperature (37°C) towards temperatures that can trigger cellular mechanisms that induce tumour cell death. Therapeutic hyperthermia has been achieved through a variety of techniques, such as thermal conduction (heated water), electromagnetic radiation (microwaves or radio waves) or ultrasound. However, these can often be intrusive and can be hampered by unfocused heat distribution. MagForce's NanoTherm therapy is a more targeted approach that utilises magnetic hyperthermia to ablate cancerous cells at the core of a tumour, while generating lower temperatures in the hyperthermia region at the edges of the tumour, minimising healthy cell damage. The therapy has several key components:

- **NanoTherm** consists of super paramagnetic iron oxide nanoparticles (SPIONs) that have a patented, bioinert coating that ensures systemic translocation does not readily occur, allowing the therapy to be repeated as needed. These SPIONs are suspended in a liquid (ferrofluid) that can be instilled directly into either tumour tissue or pasted into a resection cavity. These are then activated with an alternating magnetic field (AMF), which generates heat and kills or sensitises the tumour cells to concomitant radio- or chemotherapy.
- **NanoPlan** is a software package that calculates the strength of magnetic field needed for the magnetic nanoparticles to reach the required temperature. The software takes into account the size and location of the tumour and the distribution of nanoparticles to determine the strength of the magnetic field required to reach the therapeutic temperature needed. This proprietary software is critical for the correct usage and is fed in from either magnetic resonance imaging (MRI) or positron emission tomography (PET) data.
- **NanoActivator** is a freestanding, room-sized device that generates and applies an AMF to a patient. This AMF induces an oscillation in the iron oxide nanoparticles, which in turn generate heat. To measure the exact temperature change, a thermometry catheter is inserted into the tumour via a minimally invasive surgical procedure alongside the administration of the NanoTherm. MagForce has now created a portable solution to quickly install devices across Europe, which will aid in accelerating roll-out, and has also developed a smaller pNanoActivator, which it aims to roll-out in the US for the focal ablation of prostate lesions.

Exhibit 2: NanoTherm therapy

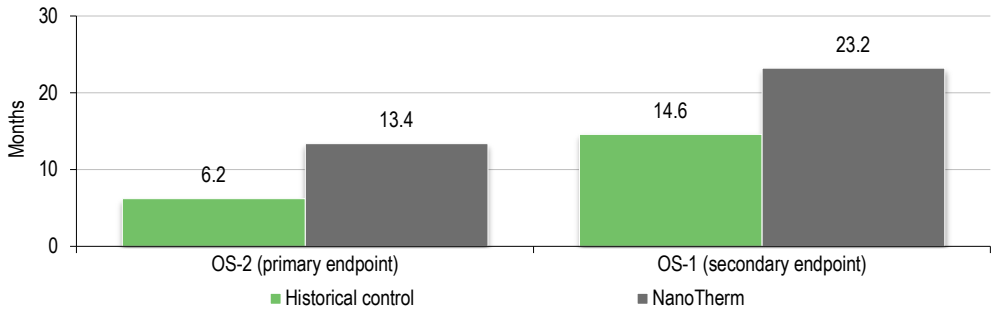
Source: MagForce

Trial data has highlighted the potential in glioblastoma patients

GBM is the most common brain and central nervous system malignancy in adults, accounting for c 50% of all primary tumours. The standard of care for newly diagnosed glioblastoma is surgical resection to the extent feasible and chemotherapy with Temodal (temozolomide) given concomitantly with and after adjuvant radiotherapy. Recurrence rates are high and treatment options limited resulting in poor survival rates, between 5% and 10% after five years from initial diagnosis. Data from the largest trial to date using NanoTherm therapy were published in 2010; although the data are now slightly dated and the technique has evolved, they highlighted that NanoTherm could provide meaningful clinical benefit to patients with GBM.

The trial enrolled 66 patients (59 with recurrent glioblastoma) in a single-arm study, which used a combination of thermal ablation with NanoTherm (6×1 hour semi-weekly sessions, median peak temp 51.2°C) and adjunct radiotherapy (BED: 30 Gy; 5×2 Gy/week). The primary endpoint was overall survival following diagnosis of tumour recurrence (OS-2), with the secondary endpoint being overall survival after primary tumour diagnosis (OS-1). As highlighted in Exhibit 3, the primary endpoint demonstrated an OS-2 of 13.4 months (95% CI 10.6–16.2 months), while secondary endpoint data demonstrated an OS-1 of 23.2 months (95% CI: 17.2–29.2 months).

Exhibit 3: Comparative trial data for NanoTherm in GBM



Source: Edison Investment Research, MagForce presentations

No control arm was present in the study so it is difficult to compare both these outcomes to other treatments; a trial cited by MagForce has been used as a historical control, which demonstrated that the median overall survival for 573 newly diagnosed patients, utilising a combination of radiotherapy and temozolomide, was 14.6 months (OS-1). This indicates that NanoTherm could extend median survival rates by c 7–9 months when compared to historical controls, which is impressive as treatment paradigms for glioblastoma have not progressed significantly. We caveat this and note that comparisons of trial data should be made with caution as variability in patient demographics, disease states and previous lines of treatment could distort any observations. Importantly, this clinical data warranted the European approval of NanoTherm via a CE mark in 2010.

In December 2018 preliminary findings were published (in the Journal of Neuro-Oncology, highlighting how the utility of NanoTherm has now evolved beyond its use in the initial study, with a pioneering 'NanoPaste' technique emerging that might improve on the previous survival rates. During the resection of recurrent tumours, the resection cavity is coated with magnetic nanoparticles and patients underwent cycles of intracavity thermotherapy with concurrent radiotherapy. Although the sample size from this initial study is too small to draw any reliable conclusions, it highlighted a potent immune response was trigged, with two of six patients having long-lasting responses to treatment (OS-2 >23 months). Subsequent clinical studies are now warranted to confirm these preliminary findings.

Sensitivities

In Europe, delivering revenues from the treatment of brain tumours will help to increase confidence in management's targets. Any further delays in the roll-out could affect expected revenue generation and this could translate into further funding requirements, although we highlight that MagForce can draw down additional tranches from its loan facility with the EIB (€25m remaining) and has access to €15m growth funding (via zero interest bearing convertible notes) from Yorkville Advisors Global. We only value the opportunity for the treatment of GBM in Europe. However, we recognise that should the ongoing prostate cancer trial be successful, MagForce could potentially broaden the use of its European devices. As the standards of care in oncology are evolving, failure to deliver on timelines could have an impact on MagForce's ability to successfully commercialise NanoTherm.

We believe that the key near-term sensitivity for MagForce remains obtaining FDA approval for NanoTherm in treating prostate cancer; successful execution of the trial is critical to this, as is getting the smaller pNanoActivator devices approved (using the NanoActivator as a predicative device). Attaining reimbursement in the US will also be important but as MagForce will be pricing its treatment in line with brachytherapy (radiotherapy), management has guided that it should not be a

significant issue to provide the comparable efficacy and tolerability necessary for regulatory approval. The NanoTherm US prostate indication contributes ~70% (€6.6/share) of our valuation. Although the US subsidiary has secured funding for completion of this study and the installation of pNanoActivator devices necessary to launch initially, should the US trial encounter material delays or if sales do not ramp-up as planned, the need to raise additional capital could result in further dilution of its position in the US subsidiary.

Valuation

Our updated valuation is €269.1m or €9.7 per MagForce share, based on a risk-adjusted NPV analysis. It is centred on MagForce's NanoTherm therapy, risk-adjusted to reflect the current development status and the respective core strategies for the EU and US. We value only GBM in the EU and prostate cancer in the US; although we recognise MagForce's future intention to eventually treat additional indications in each region, we do not ascribe value to this in our base case. In each indication and region, our valuation includes our revenue forecasts and estimates for costs, including R&D and S&M. A summary of the assumptions we have made in our peak sales forecasts is outlined in Exhibit 4.

Exhibit 4: Peak sales forecasts

Product	Country	Indication	Launch/peak sales	Assumptions
NanoTherm/ NanoActivators	Germany	GBM	2015 €15m ($17m)	With the installation of a new device in Zwickau, three NanoActivator devices are operational and fully commercial in Germany; and management guides that two more devices will be installed in Germany in 2020. We assume these devices will ramp-up to peak usage in 2025, which we translate to c 150 patients/device/year or 750 patients treated at peak. In Germany we estimate the annual mortality rate from glioblastoma will be c 3,500 in 2025, which is representative of the eligible patients, indicating peak penetration of c 22%. Assuming treatment maintains its pricing at €23k/patient, **our revised forecast peak sales is €15.0m.**
	Europe (ex Germany)	GBM	2019 €37m ($42m)	With the installation of the first device in Lublin, Poland, in 2019, one NanoActivator device was fully commercial during 2019; we expect one more device in 2020 and then two installations a year (ex-Germany) thereafter. We assume these devices will ramp-up to peak usage in 2025 with 150 patients/device/year treated or 1,800 patients treated at peak. In Europe (ex Germany) we estimate the annual mortality rate from glioblastoma will be c 25,000 in 2025, which is a fair representation of eligible patients; this indicates peak penetration of c 7%. Assuming treatment maintains its pricing at €23k/patient, **our revised forecast peak sales is €37m.**
NanoTherm/ pNanoActivators	US	Prostate cancer	2021 €234m ($265m)	Assuming a launch in Q221, we expect that MagForce will install 48 pNanoActivator devices by 2022 (in addition to the 5 NanoActivators in place by end 2020) in key urology practices across the US and 150 devices installed by 2026. We assume that these devices will ramp up to peak usage in 2026, which we believe translates to 250 patients/device/year or 37,500 patients treated at peak. We estimate that there will be around 170,000 patients eligible for treatment in the US in 2026, which indicates peak penetration of c 22%. Assuming treatment is priced at $7k/patient, in line with brachytherapy, **we forecast peak sales of $265m.**

Source: Edison Investment Research; Global Cancer Observatory. Note: FX rate $1.13/€.

We use a 10% discount rate in Europe and 12.5% for the US. We adjust the US opportunity to reflect the 65.3% stake in MagForce USA and attribute an 80% probability of success for approval of the device. Our valuation includes €16.5m net debt reported at 31 December 2019, in addition to estimated €2m net cash held in MagForce USA, which is not disclosed in the financial statements.

Exhibit 5: MagForce risk-adjusted NPV valuation

Product	Indication	Launch	Peak sales (€m)	Peak sales ($m)	NPV (€m)	Probability	MagForce beneficial interest	rNPV (€m)	rNPV/share (€)
NanoTherm EU	GBM (Germany)	2015	15	17	34.5	100%	100%	34.5	1.2
	GBM (ex Germany)	2019	37	42	65.8	100%	100%	65.8	2.4
NanoTherm US	Prostate cancer	2021	234	265	352.3	80%	65%	184.0	6.6
Net cash/(debt) (AG)					(16.5)	100%	100%	(16.5)	(0.6)
Net cash/(debt) (US)					2.0	100%	65%	1.3	0.1
Valuation					444.0			269.1	9.7

Source: Edison Investment Research. Note: FX rate $1.13/€.

Initial sales in the US will stem from the five NanoActivators that will be in place by end 2020. We assume that all future device sales will be smaller and substantially cheaper (c $50k) pNanoActivators. However, we do not at present have clarity on the actual ratio of NanoActivators vs pNanoActivators that will be installed in the longer term and this will have an impact on the number of patients treated. Given the large weighting of the US opportunity in our valuation, we therefore highlight how the peak device usage and total number of devices installed in 2026 would affect the contribution from the subsidiary MagForce USA. Our base case assumes that peak sales represent devices operating at 250 patients/device for 150 operational devices. If usage surpasses this (300–350 patients/device), either through increasing the amount of patients treated per shift or the amount of shifts a day, there is 13–25% upside to our base case valuation of MagForce. Additionally, failure to fully utilise these devices (200–150 patients/device) represents an equivalent 12–25% downside to our base case. If additional devices are installed in treatment centres (185–220 devices), there is again a 13–25% upside to our base case valuation, with a similar downside (13–25%) if fewer devices (115–80 devices) than are expected are installed.

From our perspective, the timelines to achieving treatment sales in the US during H221 are somewhat ambitious and will require a timely execution of the trial recruitment, regulatory filing and launch within the next 12 months. We have revised launch to Q221 in our base-case valuation, in line with company guidance. Should this not be achieved, and commercial treatments pushed back further, this would have a material impact on our base case.

Financials

MagForce AG (MagForce) is the parent company of the MagForce group, which consists of seven companies: MagForce AG, MagForce USA, MagForce USA Holding GmbH, MagForce Ventures GmbH, MT MedTech Engineering GmbH and the wholly owned regional sales subsidiaries MagForce sp. z o.o. in Poland and MagForce Nanomedicine S.L. in Spain. The company is not required to report consolidated financial statements under HGB accounting standards; while MagForce USA is not currently consolidated as per company reporting, we do not consolidate its contributions into our financial forecasts; however, we do include it in our valuation. We expect that the company will start consolidating its statements as MagForce USA becomes a profitable operation.

MagForce revenues increased in FY19 to €840k (FY18: €67k) as significant growth in NanoTherm deliveries to subsidiaries (FY19: €793k vs FY18: €0k) offset a small decline in treatment sales in Europe, which continue to be affected by a lengthy reimbursement process in Germany (carried out on a per-patient basis). Difficulties securing cross-border reimbursement has prohibited foreign patients (ex-Germany) travelling for NanoTherm treatment. Expansion into Europe with the establishment of centres in Poland has led to an increase in the number of patients treated post period.

Other operating income declined significantly to €904k in FY19 (FY18: €14.9m), as the prior year benefited from the extraordinary transfer of 975,000 shares in MagForce USA to MagForce USA Holding GmbH and the consequent booking of hidden reserves of €13.9m at the parent company level, based on the fair market value from the capital raise in August 2018. Reported operating income in FY19 stated a loss of €6.2m (vs profit of €6.8m in FY18) as it did not benefit from this positive impact. We highlight that this is a non-cash item and believe it is non-operating in nature, thus our FY18 adjusted operating income represents a loss €7.1m. This highlights a reduced year-on-year loss in FY19 due to growing revenues and is in line with the company's previous guidance and our expectations. We expect MagForce will report operating losses until sales pick up after reimbursement has been fully resolved in 2020 and ex-Germany centre patient growth continues. After this we forecast sustainable profitability from 2022 with operating margins of c 50%;

if MagForce USA is consolidated we believe these margins would improve, to c 60%, as would the top line.

Personnel expenses remained stable at €4.0m (FY18: €3.9m) and reflect expenses for wages, salaries and retirement benefits. Cost of materials and services decreased to €164k (FY18: €455k). We believe it is likely this will increase in 2020/21 in preparation for the launch in the US. Other operating expenses increased to €3.4m (FY18: €3.2m) primarily due to higher impairment losses on interest receivables from its affiliated company MT MedTech Engineering GmbH (responsible for NanoActivator production and development) as well as higher patent costs.

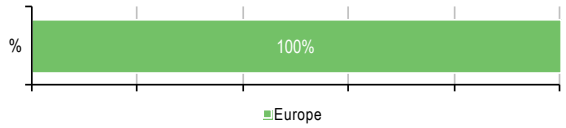
MagForce reported cash and cash equivalents at 31 December 2019 of €167k. We also note the $4.5m capital increase (through the issuance of 292,200 shares) of its US subsidiary MagForce USA in December 2019 from Lipps & Associates (principle owner is CEO Ben Lipps), which will ensure funding for the Stage 2 US prostate cancer trial and preparations for commercialisation. This reduces MagForce AG's holding in MagForce USA from 67.9% to 65.3%.

We believe an additional €25m of financing will be required to fund operations until profitability in 2022; we expect that this will be drawn from the remaining €25m of the EIB loan facility. Post period in June 2020, MagForce signed an agreement with Yorkville Advisors Global LP for a growth financing of up to €15m via zero interest bearing convertible notes. This can be drawn in up to five tranches, with the first tranche of €2.5m expected to be drawn shortly.

Exhibit 6: Financial summary

€'000s	2016	2017	2018	2019	2020e	2021e
Year end 31 December	HGB	HGB	HGB	HGB	HGB	HGB
PROFIT & LOSS						
Revenue	474	716	67	840	1,058	4,928
Cost of Sales	(574)	(974)	(455)	(164)	(2,092)	(1,190)
Gross Profit	(101)	(258)	(388)	675	(1,034)	3,738
EBITDA	(6,555)	(8,763)	(7,068)	(6,203)	(10,745)	(6,198)
Operating Profit (before amort. and except.)	(7,457)	(9,434)	(7,068)	(6,203)	(10,745)	(6,198)
Intangible Amortisation	(4)	(1)	0	0	0	0
Exceptionals	0	2,024	13,896	0	0	0
Other	0	0	(877)	(1,058)	0	0
Operating Profit	(7,461)	(7,411)	5,951	(7,261)	(10,745)	(6,198)
Net Interest	231	(53)	(1,591)	(1,468)	(1,210)	40
Profit Before Tax (norm)	(7,226)	(9,487)	(8,659)	(7,671)	(11,955)	(6,158)
Profit Before Tax (reported)	(7,230)	(7,464)	4,360	(8,729)	(11,955)	(6,158)
Tax	(1)	(1)	(2)	(2)	0	0
Profit After Tax (norm)	(7,227)	(9,488)	(8,661)	(7,672)	(11,955)	(6,158)
Profit After Tax (reported)	(7,231)	(7,465)	4,358	(8,731)	(11,955)	(6,158)
Average Number of Shares Outstanding (m)	26.0	26.3	26.4	27.1	27.7	27.7
EPS - normalised (c)	(27.8)	(36.0)	(32.8)	(28.3)	(43.2)	(22.2)
EPS - (reported) (€)	(0.28)	(0.28)	0.17	(0.32)	(0.43)	(0.22)
Dividend per share (€)	0.0	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)	N/A	N/A	N/A	80.4	N/A	75.8
EBITDA Margin (%)	N/A	N/A	N/A	N/A	N/A	N/A
Operating Margin (before GW and except.) (%)	N/A	N/A	N/A	N/A	N/A	N/A
BALANCE SHEET						
Fixed Assets	18,742	20,672	34,470	34,381	35,163	35,456
Intangible Assets	3	2	91	172	266	361
Tangible Assets	3,706	3,589	3,401	3,227	3,914	4,112
Investments	15,033	17,082	30,978	30,983	30,983	30,983
Current Assets	1,536	1,360	2,664	1,682	(3,376)	(7,986)
Stocks	71	301	291	59	172	98
Debtors	71	85	95	96	580	2,700
Cash	614	665	1,493	167	1,264	3,828
Other	780	307	785	1,360	1,360	1,360
Current Liabilities	(4,431)	(3,747)	(3,049)	(5,057)	(4,670)	(5,731)
Creditors	(4,431)	(3,747)	(3,049)	(5,057)	(4,670)	(5,731)
Short term borrowings	0	0	0	0	0	0
Long Term Liabilities	(197)	(5,091)	(15,926)	(16,894)	(31,713)	(41,713)
Long term borrowings	0	(5,012)	(15,876)	(16,674)	(31,674)	(41,674)
Other long term liabilities	(197)	(79)	(50)	(221)	(39)	(39)
Net Assets	15,650	13,194	18,159	14,111	2,156	(4,002)
CASH FLOW						
Operating Cash Flow	(1,079)	(5,286)	(4,636)	(3,143)	(11,117)	(6,334)
Net Interest	231	(53)	(2,468)	(2,526)	(1,210)	40
Tax	(1)	(1)	(2)	(2)	0	0
Capex	(115)	(553)	(1,370)	(1,941)	(1,576)	(1,143)
Acquisitions/disposals	0	0	0	0	0	0
Financing	0	5,000	0	6,286	0	0
Dividends	0	0	0	0	0	0
Net Cash Flow	(964)	(894)	(8,476)	(1,326)	(13,903)	(7,437)
Opening net debt/(cash)	(1,393)	(614)	4,347	14,383	16,506	30,409
HP finance leases initiated	0	0	0	0	0	0
Other	185	(4,067)	(1,560)	(797)	0	0
Closing net debt/(cash)	(614)	4,347	14,383	16,506	30,409	37,846

Source: Company accounts, Edison Investment Research. Note: Reported other operating income (non-cash) relating to the transfer of shares between subsidiaries has been booked as an exceptional item in our model.

Contact details	Revenue by geography
Max-Planck-Strasse 3 12489 Berlin Germany +49 (0)30 3083 800 www.magforce.de	

Management team

CEO: Ben Lipps

Dr Lipps joined MagForce in September 2013, having previously been chair and CEO of Fresenius Medical Care since 1999. Dr Lipps led the research team that developed the first commercial hollow fibre artificial kidney at the end of the 1960s. Before joining Fresenius Group in 1985, Dr Lipps held several research management positions in various companies, among them Dow Chemical. He earned his master's and doctoral degrees at the Massachusetts Institute of Technology in chemical engineering.

CFO: Christian von Volkmann

Christian von Volkmann joined MagForce as CFO in May 2012. He was previously at Jerini, successfully contributing to its IPO in 2005, and was promoted to CFO in 2008 during the subsequent acquisition by Shire. Mr von Volkmann has more than 14 years of corporate finance and capital market transaction experience. He studied business administration at the Julius Maximilian University and is also a licensed certified public accountant in the US.

COO: Hoda Tawfik

Professor Dr Hoda Tawfik has been at MagForce since May 2011. She has over 20 years' experience in the field of clinical development and medical affairs within the pharma/biotech industry. Before joining MagForce she worked at Medigene AG as head of the global clinical operations department and medical affairs for nine years. Dr Tawfik completed her pharmacy studies at the University of Cairo, and obtained a PhD in pharmacology and toxicology from the University of Düsseldorf.

Principal shareholders	(%)
Avalon Capital One	23.18
Coreo	9.08
M&G Investment Management	2.89
Skagen	2.45
Baring Asset Management	1.24

Companies named in this report

N/A

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