Review

Edison investment research

15 January 2008

Protonex Technology Corporation

Year End	Revenue ($m)	PBT* ($m)	EPS* (¢)	DPS (¢)	PE (x)	Yield (%)
09/06	2.3	(5.2)	(36.8)	0.0	N/A	N/A
09/07	6.0	(7.6)	(14.6)	0.0	N/A	N/A
09/08e	9.0	(9.8)	(15.7)	0.0	N/A	N/A
09/09e	14.0	(9.0)	(14.1)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding goodwill amortisation and exceptional items

Investment summary: Production preparations

2008 looks to be a year of preparations ahead of first product deliveries towards year end. With strong cash balances and a steady increase in funded development work, it has the resources to achieve this. Protonex remains more advanced than many in the UK fuel cell sector, and we await more contract newsflow during the year.

Preliminary results at the top end of the range

Full year revenues of $6.0m ($2.3m) and an underlying pre-tax loss of $7.5 ($5.2m) were slightly better than we had expected. Net cash balances of $33.9m leave the company with a funding until 2010. Of the total revenues, $5.5m ($1.8m) came from US Government military development contracts.

Focus on preparations for production

Management expect the first deliveries of products at the end of 2008 to military, followed by commercial markets. During 2007 the group's resources continue to shift to take advantage of the opportunities in commercial markets and about half the technical resources are now focussed here.

Changes to forecasts caused by US budget delays

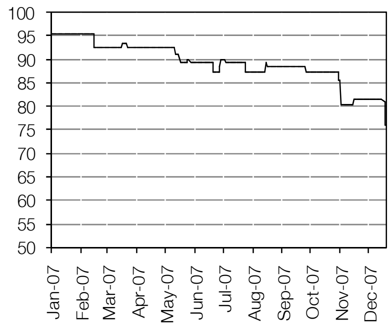
A two-three month delay in the 2008 US Federal budget has pushed back the start of several of Protonex's development contracts. Although virtually all the programmes remain intact, some programme revenues are expected to slip from 2008 to 2009. We are hence cutting our 2008 sales forecast by $2m to $9m, which has the impact of raising 2008 pre-tax losses to $9.8m (previously $8.7m). These delays should be no impact on product development schedules or revenue streams.

Valuation: More advanced than most of the sector

Amongst its peers, Protonex is one of the few to be generating meaningful revenues; it is also well funded to weather what could be a tough year for small cap technology stocks. Looking at EV/Sales (2008), which is about the only valid valuation tool, Protonex is one of the cheapest at 8.4x. The sector as a whole still remains at least two years away from meaningful product revenues, which is likely to be a handicap for valuations until clear contracts announcements arrive.

Price (PTX)	72.5p
Market Cap	£50m

Share price graph



Share details

Code	PTX / PTXU
Listing	AIM
Sector	Electronic & Electrical Equip.
Shares in issue	64.4m

Price

	High	Low
52 week	96.0p	72.5p

Balance Sheet as at 30 Sept 2007

Debt/Equity (%)	N/M
NAV per share (¢)	53.4
Net cash ($m)	33.9

Business

PTX develops and manufactures compact, lightweight, high-performance fuel cell systems for portable power applications between 10W to 1,000W, using PEM and SOFC technologies.

Valuation

	2007	2008e	2009e
P/E Relative	N/A	N/A	N/A
P/CF	N/A	N/A	N/A
EV/Sales	11.3	8.4	6.2
ROE	N/A	N/A	N/A

Geography based on revenues

UK	Europe	US	Other
0%	0%	100%	0%

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Protonex Technology Corporation is a research client of Edison Investment Research Limited

Full year results

Key highlights

A significant increase in revenues reflects an increase in the scale of work being carried out for the US Government and in particular the award of the largest contract to date worth $3.5m for the US army. These revenues in fact show that 91% of sales derived from US Government development contracts, with the remainder commercial programmes.

The other key features of 2007 were the acquisition of Mesoscopic Devices, giving Protonex a complementary fuel cell technology (solid oxide), and the raising of $26.5m via a secondary placing.

Exhibit 1: Key figures

	2005	2006	2007
Revenues ($m)	1.76	2.32	6.00
Net loss before tax ($m)	(2.22)	(5.18)	(7.57)
EPS (c) *	(59)	(37)	(15)
Net cash burn ($m) #	(2.5)	(4.5)	(8.0)
Year end cash ($m)	9.5	18.7	33.9

Source: Protonex * excluding exceptional items, # excluding share issues and acquisitions

Demonstration of its first commercial product, the 250W PEM methanol fuel generator and further successful trials of UAVs using advanced PEM fuel cells, show continued progress is being made on product development. While new agreements with Raytheon on the 250W PEM military power system and Cummins on the c.2kW SOFC commercial auxiliary power unit show that commercial relationships are also developing well.

Financial performance

Published full year figures show a net loss before tax of $9.4m, however this includes $1.85m charge for in process R&D, which is a one off accounting write-off associated with the Mesoscopic Devices acquisition. This is shown in the cash flow, where the annual burn of c.$8.0m is much closer to the underlying profit level of $7.6m. As planned the group's cost base in 2007 rose to c.$15m ($8m) as development increased, with the addition of Mesoscopic Devices, and personnel numbers rising to about 80 people.

Outlook for 2008 –setting up for production

US Government development contracts move forward

We expect the company to deliver the first of its US army battery charger systems in the next few months and follow-on funding is already being pursued to extend this $3.5m development contract. In fact we expect a series of contract announcements in the next six months as the delayed agreement on the US federal budget frees up funding.

On the military side, we also expect additional trials of UAVs to yield further test results and push the case for this programme to move from development towards production. An announcement last November confirmed that flight times have already been extended to over seven hours with more flight duration expected.

Emphasis on commercial programmes increases

Much of the emphasis within Protonex at the moment is to shift increased resources towards commercial programmes, and this should continue through to year end. The three major initial opportunities look to be:

- The 250W PEM methanol fuelled portable power generator, a parallel product to the military generator/APU.
- The diesel fuelled SOFC auxiliary power unit for trucks, which is being developed with Cummins.
- 75-125W propane fuelled SOFC power generator.

Protonex expects initial PEM based products could be launched at the end of the current fiscal year and we take this to mean quantities of tens to hundreds of units. Development of SOFC units is probably about twelve months behind this. Our forecasts of $9m revenues in 2008 assumes under $1m of product sales with the remainder development work. In 2009 we expect this could rise to $4-5m of the total $14m group revenues.

With the step up in commercial development and preparation for product launch, we expect R&D and other costs to rise from c.$15m to c.$19m. With revenues rising to an anticipated $9m in 2008, this leaves a pre-tax loss of just under $10m and a similar sized cash burn.

Set up for production

Protonex's manufacturing process is not capital intensive due to its efficient injection moulding process. Low volumes will initially be produced in house at pilot plant level, however, the company already has potential subcontractors and assemblers lined up when volumes increase. Hence this should not be a bottleneck to increased revenues in our view.

The precedent for early adoption of fuel cells exists already in Germany, where Smart Fuel Cell has sold many thousands of lower power fuel cell auxiliary power units to the campervan niche market at premium prices (retail price c.€3,000-4,000 each). We see the commercial portable fuel cell market developing in this way through niches and Protonex is placing a lot of investment in the propane based portable power generator as it offers low noise, reduced emissions, and longer run times as well as an easily available fuel.

Valuation update

EV/Sales relative comparison

Relative comparison techniques are difficult in the sector as nearly all claim to be two years away from meaningful revenues. We favour companies that have demonstrated some ability to gather revenues from preproduction sales and development contracts. In this case, EV/Sales is the one comparative measure that has some validity for those companies starting funded development work. These revenues give some indication of how close a company is to marketing a finished product. They also indicate that the purchaser has some confidence in the company's product and market opportunity.

The companies with high EV/Sales valuations have little development work to date, while CMR and Voller have valuations very close to their cash balances. Of the others, Protonex looks to be at the cheaper end of the range of 10-30x EV/Sales. With a ratio of 3.5x cash balances to 2008 anticipated losses it also looks to be one of the better funded and is not at a big premium to its asset value.

Exhibit 2: Peer group comparison – UK Fuel Cell sector

Company	Main Product	Price 14 Jan 2008 (p)	Market Cap (£m)	Net Assets (£m)	Net cash (debt) (£m)	2007 Sales (£m)	2007 Profit (Loss) (£m)	Mkt cap/ NAV	Cash balance / 2007 loss	EV/ Sales (2007)
Acta	Catalysts	68	24	7	5	0.4	(4.0)	5.1	1.2	54.6
AFC Energy	Alkaline f.c	15	13	3	3	0.0	(1.7)	3.9	1.6	N/A
Ceramic	Stationary	23	71	24	21	1.8	(7.9)	2.9	2.7	28.5
Ceres Power	Stationary	221	133	13	11	0.1	(5.3)	10.3	2.1	N/A
CMR	Portable	43	9	9	9	0.0	(3.1)	1.0	2.7	N/A
IdaTech	Stationary	100	49	22	13	1.8	(8.6)	2.3	1.6	20.2
ITM Power	Electrolysers	106	107	30	29	0.0	(3.7)	3.6	7.8	N/A
Polyfuel	Membranes	23	13	7	7	0.6	(4.6)	1.9	1.5	10.2
Protonex	Portable	78	50	22	17	3.0	(3.8)	2.2	4.5	11.0
Proton P.S	Transport	50	16	1	1	0.8	(2.0)	11.1	0.5	18.2
Voller	Portable	13	3	4	4	0.0	(2.2)	0.7	1.7	N/A
Average			46	13	11			4.1	2.5	

Source: Hemscott, Edison Research Estimates, Thompson First Call. Prices as at 14/1/2008

Key Sensitivities

- Technology risk & timing. As with the rest of the sector, this remains the major investment risk. For Protonex we are satisfied delay rather than technology is the worst potential issue and the heavy involvement with the US military adds an extra layer of uncertainity. Delays to Federal budgets have in fact caused a two to three month delay in 2008.
- Civilian market speed of acceptance unknown. Competition in the commercial market is more intense. The company also faces potential competition from single fuel companies such as IdaTech, Jadoo, Smart Fuel Cell, UltraCell and Voller. To gain acceptance fuel cells will have to be reliable and price competitive.
- Fiscal endurance. With approximately $34m in cash at the September year-end we believe that the company has considerable cash resources to sustain it into the mid-term and possibly until it is cash flow positive.

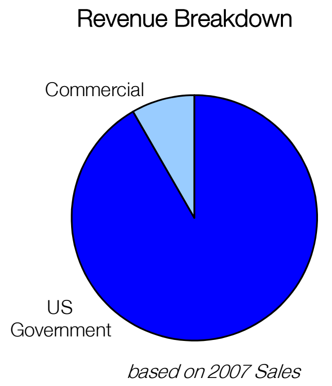
Company background

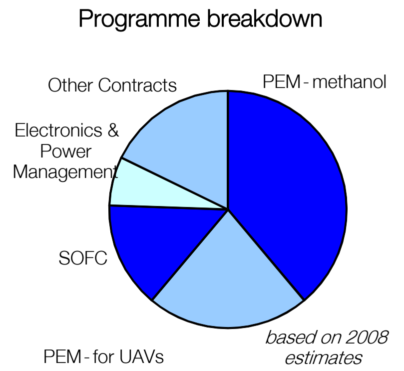
A broad technology base in fuel cells

Protonex is a US company, founded in 2000 and listed on AIM in June 2006. It seeks to commercialise portable fuel cells and already has development contracts with the US Government and several commercial customers. The current product applications focus on products with power outputs between 10 and 1,000 Watts and are for portable generators, auxiliary power, battery charging, and specialty power.

Protonex differs from many peers in that it has a wider technology base, using Proton Exchange Membrane (PEM) and Solid Oxide Fuel Cell (SOFC) technologies; the latter through the acquisition of Mesoscopic Devices, last April. PEM systems, running on hydrogen, chemical hydrides and methanol fuels, are beginning to enter the commercial and military markets. SOFC over twelve months behind, but offers the opportunity to use commercially available fuels (propane, gasoline, & diesel). The company's fuel cell products deliver high performance and low cost, which together with its multi-fuel approach, meet the needs of a diverse range of markets. The high demand and low price sensitivity of the military market, where Protonex has already won $29m in contracts, provides a strong foundation to build commercial business.

Exhibit 3: Company breakdowns





Source: Edison Research estimates

PEM injection moulded stack

One of Protonex' differentiating qualities is in the design and manufacture of PEM stacks, the electricity producing core of a fuel cell. Its patented process has a single step approach to manufacturing these fuel cell stacks via injection moulded resin. This saves considerable time and permits continuous production. Conventional methods of construction are very time consuming because they require multiple precise manufacturing stages, including complex sealing and spacing

Partnerships

A second element of the strategy is to enter partnerships with companies who can offer complementary skills in the manufacture and marketing of Protonex products. A key part of the PTX business plan is to acquire 'off-the-shelf' balance of plant components. Parker Hannifin, PTX's partner, is a world leader in this area. It has also formed strong relationships on product development with industry leaders like Cummins and Raytheon.

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Exhibit 4: Financials

$'000s	2005	2006	2007	2008e	2009e
Year-ending September					
PROFIT & LOSS					
Revenue	1,757	2,316	5,990	9,000	14,000
Cost of Sales	0	0	0	(500)	(2,800)
Gross Profit	1,757	2,316	5,990	8,500	11,200
EBITDA	(2,330)	(5,569)	(8,563)	(10,400)	(8,950)
Operating Profit (before GW and except.)	(2,374)	(5,674)	(8,897)	(11,100)	(9,950)
Goodwill Amortisation	0	0	0	0	0
Exceptionals	0	0	(1,852)	0	0
Other	0	0	0	0	0
Operating Profit	(2,374)	(5,674)	(10,749)	(11,100)	(9,950)
Net Interest	150	490	1,325	1,300	950
Profit Before Tax (norm)	(2,224)	(5,184)	(7,572)	(9,800)	(9,000)
Profit Before Tax (FRS 3)	(2,224)	(5,184)	(9,424)	(9,800)	(9,000)
Tax	0	(1)	(97)	(100)	(100)
Profit After Tax (norm)	(2,224)	(5,185)	(7,669)	(9,900)	(9,100)
Profit After Tax (FRS3)	(2,224)	(5,185)	(9,521)	(9,900)	(9,100)
Average Number of Shares Outstanding (m)	3.8	14.1	52.6	63.0	64.4
EPS - normalised (c)	(58.5)	(36.8)	(14.6)	(15.7)	(14.1)
EPS - FRS 3 (c)	(58.5)	(36.8)	(18.1)	(15.7)	(14.1)
Gross Margin (%)	100.0%	100.0%	100.0%	94.4%	80.0%
EBITDA Margin (%)	(132.6%)	(240.5%)	(142.9%)	(115.6%)	(63.9%)
Operating Margin (before GW and except.) (%)	(135.1%)	(245.0%)	(148.5%)	(123.3%)	(71.1%)
BALANCE SHEET					
Fixed Assets	275	430	10,127	11,500	13,000
Intangible Assets	0	0	7,937	8,013	8,013
Tangible Assets	275	401	1,637	2,937	4,437
Investment in associates	0	0	0	0	0
Unquoted investments	0	29	554	550	550
Current Assets	9,832	19,450	35,876	26,862	18,085
Stocks	0	105	263	400	622
Debtors	293	362	1,298	1,800	2,800
Cash	9,507	18,707	33,875	24,000	14,000
Other	32	276	441	662	662
Current Liabilities	(171)	(700)	(1,610)	(3,862)	(5,685)
Creditors	(93)	(340)	(814)	(1,500)	(2,333)
Other creditors	(78)	(360)	(796)	(2,362)	(3,351)
Short term borrowings	0	0	0	0	0
Minority interests	0	0	0	0	0
Long Term Liabilities	0	0	(97)	(100)	(100)
Long term borrowings	0	0	0	0	0
Other long term liabilities	0	0	(97)	(100)	(100)
Net Assets	9,936	19,180	44,297	34,400	25,300
CASH FLOW					
Operating Cash Flow	(2,542)	(4,703)	(7,720)	(9,074)	(8,450)
Net Interest	150	490	1,325	1,300	950
Tax	0	0	(97)	0	0
Capex	(126)	(256)	(1,470)	(2,000)	(2,500)
Acquisitions/disposals	0	0	(2,922)	0	0
Financing	10,967	13,670	26,551	0	0
Dividends	0	0	0	0	0
Other	0	0	(500)	(100)	0
Net Cash Flow	8,449	9,200	15,167	(9,874)	(10,000)
Opening net debt/(cash)	(1,058)	(9,507)	(18,707)	(33,875)	(24,000)
HP finance leases initiated	0	0	0	0	0
Other	0	0	(0)	(100)	0
Closing net debt/(cash)	(9,507)	(18,707)	(33,874)	(23,900)	(14,000)

Source: Company accounts/Edison Investment Research