red energy storage



2016 Interim Results Presentation

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H1 2016 Highlights

- Market seeding programme nearing completion – machines deployed in key markets
- **Testing programme** for redT large-scale energy storage machines **completed at PNDC**
- First in world: large-scale, contract manufactured, containerised, vanadium flow machines deployed
- Commenced joint project with E.ON to demonstrate improved payback with PV + Storage
- First energy storage machines deployed to Africa
- Gen 2 production phase underway with global manufacturing partner Jabil Circuit Inc.



storage

Market Seeding Program



energy storage

Sustainable Equity Value



energy storage

redT Product Range

Product	Power (kW)		Capacity (kWh)	Continuous Discharge at Rated Power (Hrs)*	Dimensions			
	Rated	Peak*		Nated Fower (1113)				
redT 5-20	5	10	20	4	6ft ISO			
redT 5-40	5	10	40	8	8ft ISO			
redT 5-75	5	10	75	15				
redT 10-75	10	20	75	7.5				
redT 15-75	15	30	75	5	10ft ISO HC			
redT 10-150	10	20	150	15				
redT 20-150	20	40	150	7.5				
redT 30-150	30	60	150	5				
redT 15-225	15	30	225	15				
redT 30-225	30	60	225	7.5				
redT 45-225	45	90	225	5	2014 160 116			
redT 20-300	20	40	300	15	20ft ISO HC			
redT 40-300	40	80	300	7.5				
redT 60-300	60	120	300	5				
redT 500-2500	500	1000	2500	5				
redT 1MW-5MWh	1000	2000	5000	5				
redT 5MW-25MWh	5000	10000	25000	5	Multi 20ft ISO HC			
redT 10MW-50MWh	10000	20000	50000	5				

⁵ • *100% Peak capability for 5mins every 30mins (Discharge Only)

• * Discharge duration is proportional to power requirements (i.e. at 50% power, duration is doubled)



Strategic developments

Secured

- Tier 1 manufacturing long term partnership
 - Strong balance sheet for production working capital
 - Quality manufacturing ISO, QMS, UL
 - Capacity scaling for large orders, GW capacity
 - 90 manufacturing sites globally for low cost and short lead time
- 10 year lease finance facility for customers
- Hybrid optimisation University of Newcastle

Under development

- Bankability study -> for large tenders and project finance
- Insurance wrap for warranty -> for large tenders and project finance
- Market segment distribution partners, EPC contractors, diesel genset manufacturers and solar distributors





Market Opportunity

On-grid energy storage market currently estimated to be worth \$100-\$150bn (larger than all other batteries applications put together*)

- Small grid tied renewables
- Large grid tied renewables
- Distributed generation
- Grid utility
- Key markets EU, USA, China, Japan
- Grid-tied storage estimated to be 160GW \$10bn p.a., by 2030

Off-grid estimated to be \$60-\$70bn

- Diesel generator coupling
- Mini-grid coupled with renewables
- Telcom towers

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• Key markets Africa, India, Caribbean, SE Asia



H1 2016 Financials



H1 2016 Financial Highlights

- Loss for H1 2016 €2.7m (H1 2015: profit €0.1m)
- Revenue for the period €4.5m (H1 2015: €6.4m)
- Cash held €5.5m (FY 2015: €2.9m)
- Loans and borrowings €Nil



Income Statement

Consolidated statement of comprehensive income

For the period ended 30 June 2016

		Restated	
	H1 2016	H1 2015	FY 2015
	€'000	€'000	€'000
Continuing operations			
Revenue	4,533	6,442	11,106
Cost of sales	(3,374)	(3,090)	(6,267)
Gross profit	1,159	3,352	4,839
Administrative expenses	(3,436)	(2 <i>,</i> 858)	(6,340)
Share based payment	(128)	-	-
Results from operating activities	(2,405)	494	(1,501)
Financial income	37	9	26
Financial expenses	-	(1)	(1)
Foreign exchange movement	(173)	17	165
Net financing expense	(136)	25	190
Share of loss of equity-accounted investees	-	(263)	(1,417)
Gain on disposal of equity-accounted investees	-	-	2,016
(Loss)/profit before tax	(2,541)	256	(712)
Income tax credit	(1)	(2)	12
(Loss)/profit from continuing operations	(2,542)	254	(700)
Discontinued operations			
(Loss)/profit from discontinued operations	(24)	(530)	1,370
(Loss)/profit for the period	(2,566)	(276)	670
Exchange differences on translation of foreign operations	(168)	343	351
Total comprehensive income for the period	(2,734)	67	1,021
Adjusted comprehensive income for the period [excluding FX & SBP]	(2,265)	(293)	505

2015 restated to show the effect of operations which have been discontinued.



Balance Sheet

Consolidated statement of financial position

At 30 June 2016

Non-current assets	€'000 95	€'000	€'000
	95		
Property, plant and equipment		17,523	101
Goodwill	8,167	-	8,167
Intangible assets	6,822	-	6,822
Investments in associates and joint ventures	-	2,388	-
Deferred tax assets	119	120	132
	15,203	20,031	15,222
Current assets			
Prepayments and accrued income	369	1,842	381
Trade and other receivables	747	1,610	1,058
Other financial assets	-	-	2,420
Cash and cash equivalents	5,525	4,192	2,935
	6,641	7,644	6,794
Total assets	21,844	27,675	22,016
Current liabilities			
Loans and borrowings	-	(566)	-
Trade and other payables	(3,498)	(3,391)	(5,522)
Deferred income	(524)	(353)	(408)
Corporate tax payable	(147)	(179)	(150)
	(4,169)	(4,489)	(6,080)
Non-current liabilities			
Loans and borrowings	-	(12,436)	-
Deferred income	(250)	(4,450)	(250)
	(250)	(16,886)	(250)
Total liabilities	(4,419)	(21,375)	(6,330)
Net assets	17,425	6,300	15,686

	H1 2016 €'000	H1 2015 €'000	FY 2015 €'000
Equity attributable to equity holders of the parent			0000
Share capital	4,617	2,531	4,098
Share premium	89,201	76,917	85,375
Share-based payment reserve	901	756	773
Retained earnings	(76,360)	(74,791)	(73,823)
Translation reserve	725	887	893
Other reserve	(1,621)	-	(1,621)
Non-controlling interest	(38)	-	(9)
Total equity	17,425	6,300	15,686



Cash Flow

Consolidated statement of cash flow

For the period ended 30 June 2016

Cash flows from operating activities	H1 2016 €'000	H1 2015 €'000	FY 2015 €'000
(Loss)/profit for the year	(2,734)	(278)	670
Adjustments for:			
Depreciation, amortisation and impairment	30	618	34
Amortisation of deferred income	-	(169)	-
Foreign exchange loss/(gain) on translation	341	(23)	(165)
Financial income	(37)	-	(26)
Financial expense	-	452	1
Impairment of receivables - bad debt write-off	-	-	-
Share of loss of equity accounted investees	-	263	1,417
Gain on disposal of equity-accounted investee	-	-	(2,016)
Loss/(gain) on sale of discontinued operations	24	-	(1,370)
Gain on sale of fixed assets	-	-	-
Equity settled share-based payment expenses	128	-	17
Taxation	1	-	(12)
	(2,247)	863	(1,450)
Decrease/(Increase) in trade and other receivables	334	(116)	121
(Decrease) in trade and other payables	(1,696)	(129)	(1,218)

(1,362)

(3,609)

(245)

(1,097)

618 (2,547)

Net cash outlfow from operating activities

	H1 2016	H1 2015	FY 2015
	€'000	€'000	€'000
Cash flows from investing activities			
Proceeds from disposal of discontinued operations	-	-	731
Acquisition of a subsidiary, net of cash	-	-	607
Acquisition of property, plant and equipment	(23)	(35)	(52)
Disposal of property, plant and equipment	-	-	-
Net cash inflow from investing activities	(23)	(35)	1,286
Cash flows from financing activities			
Proceeds from the issue of share capital	4,344	70	-
Proceeds from new loan	-	-	-
Proceeds from other financial assets	2,420	-	-
Repayment of borrowings	-	(184)	-
Interest received	37	9	26
Interest paid	-	(460)	(1)
Net cash inflow from financing activities	6,801	(565)	25
Net increase in cash and cash equivalents	3,169	18	(1,236)
Cash and cash equivalents at 1 January	2,935	4,058	4,057
Effect of exchange rate fluctuations on cash held	(579)	116	114
_			
Net cash and cash equivalents	5,525	4,192	2,935



Segmental Analysis

Operating segments										
For the period ended 30 June 2016	redT energy storage		Camco clean energy						Consolidated	
			Africa		US		Other		Consolidated	
		Restated		Restated		Restated		Restated		Restated
	H1 2016	H1 2015	H1 2016	H1 2015	H1 2016	H1 2015	H1 2016	H1 2015	H1 2016	H1 2015
	€'000	€'000	€'000	€′000	€'000	€'000	€'000	€'000	€'000	€'000
Segment revenue	82	356	868	606	826	3,118	2,757	2,362	4,533	6,442
Segment gross margin	(353)	362	621	534	827	2,309	65	147	1,159	3,352
Segment administrative expenses	(2,166)	(1,383)	(551)	(435)	(662)	(922)	(57)	(118)	(3,436)	(2,858)
Segment result	(2,519)	(1,021)	70	99	165	1,387	8	29	(2,277)	494
Share-based payments									(128)	-
Results from operating activities									(2,405)	494
Finance income									37	9
Finance expense									-	(1)
Foreign exchange movement									(173)	17
Share of loss of equity accounted investees									-	(263)
Taxation									(1)	(2)
Loss from discontinued operation									(24)	(530)
Loss for the period									(2,566)	(276)
Exchange differences on translation of foreign ops									(168)	343
Total comprehensive income for the year									(2,734)	67

2015 restated to show the effect of operations which have been discontinued.



Commentary

The H1 2016 financial results are a reflection of the changes made to the structure of the business in 2015 incorporating; REDH roll-in; Disposal of US biogas assets; Strategic re-focus of Africa clean energy business

redT energy storage

- Newly combined segment fully aligned and focussed on the development of the energy storage business
- Progressive growth underlined by circa. threefold increase in segmental headcount from 8 to 23

Camco clean energy

- Africa Continuing development of investment advisory business operating with two joint mandates Green Africa Power (GAP) and Renewable Energy Performance Platform (REPP)
- US Ongoing management of legacy biogas assets under service contracts
- Other Carbon activity with marginal positive cash flow

Administration expenses

- > Overall increase year-on-year, however underlying operating cost base in line with expectations
- > Year-on-year increase as direct result of REDH roll-in and growth of the business segment



"The Company is now nearing completion of the Generation One market seeding phase.

Having taken invaluable learnings from the deployment and commissioning process, we are now entering the full-scale manufacture phase for our Generation Two product.

After years of development and continuous refinement of our manufacturing and design processes, we are confident that we will bring to market a competitively priced product, that will capitalise on the high level of interest already shown by prospective customers."

Scott McGregor, Chief Executive Officer



Appendix



redT energy storage

 Vanadium-based energy storage machines, public company (RED:L)

- 15 years of development, now proven technology in the field
- Commercial and Industrial application focus

• Tier-1 volume manufacturing capability





Liquid Energy Storage

- Conventional batteries have fixed power and energy locked together in the cell – redT systems are modular and decouple power from energy – sized to your exact needs
- Flow batteries use liquid electrolyte contained outside the cell and pumped through it – like a car engine and fuel tank
- Long duration storage, with 100% depth of discharge functionality that doesn't deteriorate over time

Video: How VRFB Works



energy storage

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The Energy Storage Market



Applications



Renewables

Use redT energy storage with renewables to maximise your utilisation through timeshifting, remove constraints on existing renewable generation or gain full autonomy from the grid



Grid Services

redT energy storage machines are capable of performing grid services at both transmission and distribution levels. Use the system as a commercial asset to stack revenue generating activities and maximise your ROI



Off-Grid & Weak Grid

Use redT energy storage alongside renewables, diesel gensets or a combination of both in locations with limited or no grid connection. Reduce your operating costs and gain energy security in challenging locations

Telecoms

Low maintenance requirements and remote monitoring capabilities make the redT machine the ideal solution for remote telecommunications stations



redT Advantage



