



PV Crystalox Solar plc
2010 Preliminary Results
24 March 2011

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### **2010 Overview and Highlights**



- Wafer shipments 378MW (rebased 16% cell efficiency)
  - Up 48% on 2009 (255MW @16% previously 239MW @15%)
  - Operating at full capacity in H2
- Revenues grew 6% as volumes outperformed price falls
  - Pricing stabilised at H1 2010 levels
- Strong progress on cost reductions
  - 20% reduction in average wafer production cost in 2010
- Polysilicon production ramping up in Bitterfeld
  - Bitterfeld polysilicon costs below average contracted costs since August 2010
  - Annualised output averaging 1450MT during Jan and Feb 2011
- Customer base increased and expanded geographically
- Ingot production capacity increasing
  - From 430MW (in 2010) to 535MW by end Q1 2011

## **Rebasing Capacity and Output**



- Group MW production output and capacity now estimated assuming 16% cell efficiency.
  - Previously assumed conversion of wafers to 15% efficient cells
  - Now average efficiencies of 16-16.5% are routinely achieved by our customers improvements in cell processing
  - Rebasing in common with practice of many other wafer companies.
- 2009 data restated to enable comparison on consistent basis.
  - 2009 output of 239MW is now restated as 255MW to reflect the increased cell output





**Financials** 

## **Financial Highlights**



- Revenues up 6.4% at €252.6m (2009: €237.3m)
- EBIT excluding currency impact €34.5m (2009: €50.0m)
  - Currency loss of €1.2m
- Reported EBIT €33.3m (2009: €41.7m)
- Earnings after tax €23.3m (2009: €29.6m)
  - EPS €0.057 (2009: €0.072)
- Net cash of €54.8m at 31 December 2010 (31 Dec 2009: €70.2m)
- Final dividend of €0.02 per share (2009: €0.02)

## **Financial Highlights**



(€000)	31-Dec-10	31-Dec-09	Change
Revenues	252,559	237,320	6.4%
EBIT exc currency (losses)/gain	34,525	52,037	-31.0%
Currency (losses)/gain	(1,176)	(8,297)	-85.8%
EBIT	33,349	41,740	-20.1%
Net interest income	377	776	-51.4%
Earnings before taxes (EBT)	33,726	42,516	-20.7%
Income taxes	(10,462)	(12,957)	-19.3%
Earnings	23,264	29,559	-21.3%
Earnings per share (Euro cents)	5.7	7.2	-20.8%
Dividends	3.0	4.0	-25.0%
Free cash Flow	(6,300)	3,330	-
Net cash	54,838	70,150	-

## **Currency Gains**

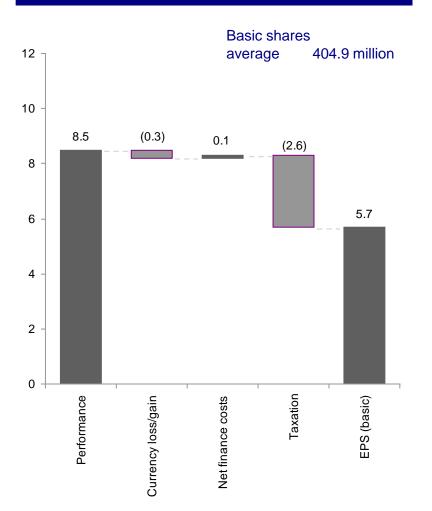


(€m)	31-Dec-10	31-Dec-09
Revaluation of cash balances	0.6	(2.7)
Revaluation of intergroup/external loans	(2.1)	(1.3)
Revaluation of Group raw material deposits	(1.7)	(1.9)
Debtor/creditor revaluation	(0.4)	(2.8)
Revaluation of suppliers/customers deposits	2.4	0.4
Total currency (loss)	(1.2)	(8.3)

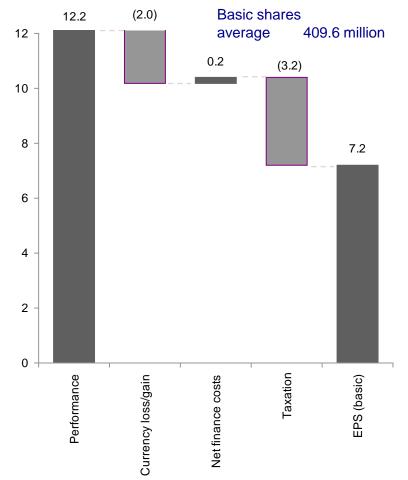
#### **Drivers of EPS**







#### 2009 (euro cents)



## **Summary consolidated balance sheet**



(€m)	31-Dec-10	31-Dec-09
Current Assets	232.9	216.1
Non-current Assets	179.0	151.5
Total Assets	411.9	367.6
Current Liabilities	95.4	67.0
Non-current Liabilities	35.7	40.5
Share Cap & Non-dist Reserves	76.0	80.7
Profit & Loss Reserves	204.8	179.4
Total Liabilities and Shareholder Equity	411.9	367.6

## Summary cash flow & net cash/(debt) analysis pv crystalox

(€m)	31-Dec-10	31-Dec-09
Adjusted Earnings before tax	41.5	45.3
Tax paid	-7.8	-40.4
Adjusted Earnings after tax	33.7	4.9
Changes in working capital	-23.5	-2.8
Net cash flows in investing activities	-16.5	1.2
Free cash flow*	-6.3	3.3
Net cash flows used in financing activities	7.2	0.3
Net change in cash in period	0.9	3.6
Cash and equivalents, start of year	100.4	96.8
Cash and equivalents, end of year	101.3	100.4
Group borrowings	-46.5	-30.3
Cash / (net debt)	54.8	70.2
* Free cash flow defined as net cash from operating activities less cash used in investir interest received	ng less	





# Strategic and Operational Review

## **Strategy**



- Continued focus on operating cost reduction
  - Operating Bitterfeld polysilicon facility at full capacity
  - Production efficiencies
  - Higher yields
- Flexibility of production
  - Diversity in sourcing polysilicon
  - Optionality in wafering
- Continued focus on major PV companies
  - Enhance relationship with existing customers
  - New customers in major markets Taiwan and Korea
- Further development of the leading silicon processing technology
  - Working with customers to increase product quality and develop next generation of wafer technology

Strengthen position as a leading pure-play solar wafer manufacturer

#### **Cost reduction**



- Average wafer production costs decreased by 20% during 2010
  - Ahead of our 10-15% target
  - Lower Bitterfeld operating costs compared to 2009 when production started
  - Higher wafer yields led to more effective silicon utilisation
  - Stronger Japanese Yen had adverse effect on wafering and material costs

#### 2011 cost reduction

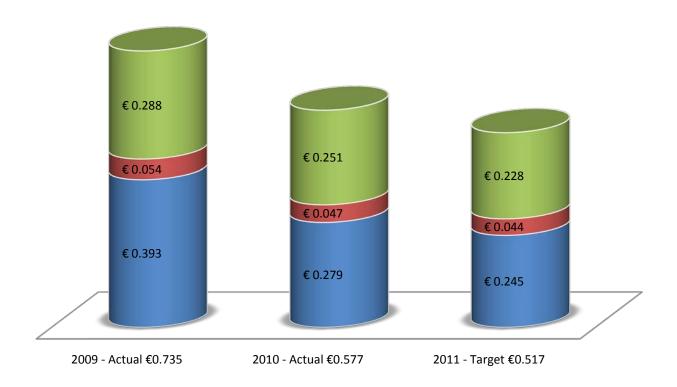
- The Group is targeting a further 10-15% reduction in 2011
- Lower polysilicon cost from our internal production plant in Bitterfeld will be a key contributor

#### **Cost Breakdowns**



#### **PVCS Wafer Cost (€/W)**

■ Blocking & Wafering ■ Ingot Production ■ Silicon Cost

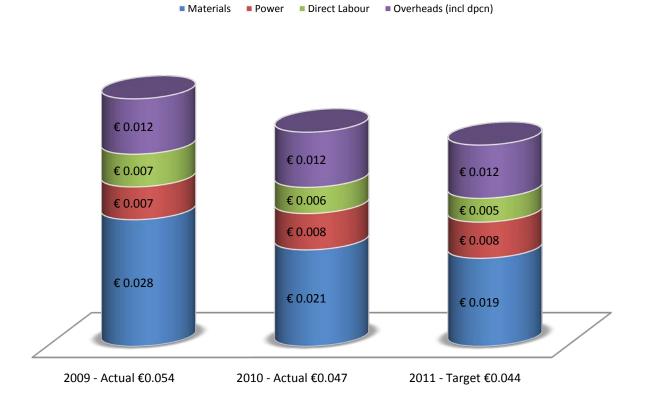


Cell efficiency assumed at 16.0%

#### **Cost Breakdowns**



#### **PVCS Ingot Production Cost (€/W)**



Cell efficiency assumed at 16.0%

## **Core Technology - Ingot production**

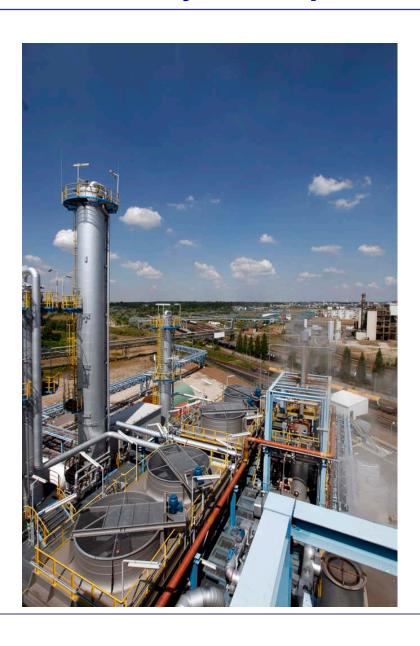


- Development of Multicrystalline Silicon Directional Solidification pioneered by PV Crystalox
- Ingot Production systems designed and constructed inhouse
  - Lower capex cost
  - Faster innovation cycle
- Ingot production in UK
  - Engineering expertise
  - Highly automated systems
    - Low labour content
- Crystallisation Process
  - Controls material quality
  - Labour represents only1% of wafer production cost



## Polysilicon production at Bitterfeld





- Annualised output averaging 1450MT during the first two months of 2011
- Expected to operate at nameplate capacity of 1800MT during H2 2011
- Fully loaded production cost since August 2010 has been below the average price of our contracted polysilicon from external suppliers
- Significant driver of future profitability
  - Further cost reduction expected during 2011 as output ramps up

## Flexibility of production





#### Ingot Production

100% in house



#### Polysilicon supply

- Internal production at Bitterfeld
- External suppliers in Germany and Japan
- New five year contract agreed with external supplier in 2010



#### Wafering

- Internal production at Erfurt
- External subcontractors in Japan
- Proximity to customers

## Focus on major PV companies

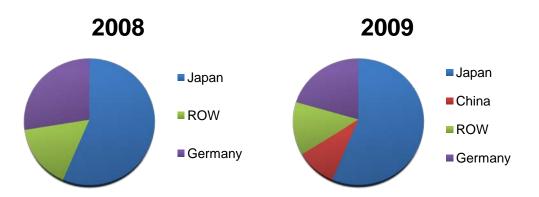


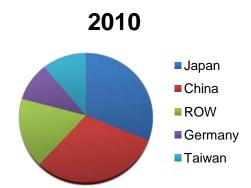
#### Customer base expanding

- Tier 1 PV Companies
- Better geographical balance

#### 2010 sales

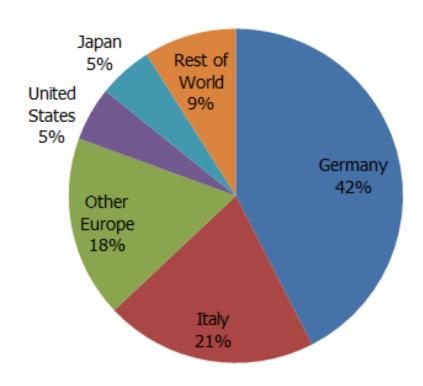
- China now second largest market
- Taiwan sales 11%
- 74.7% in Asia





#### **Share of Global PV Demand in 2010**

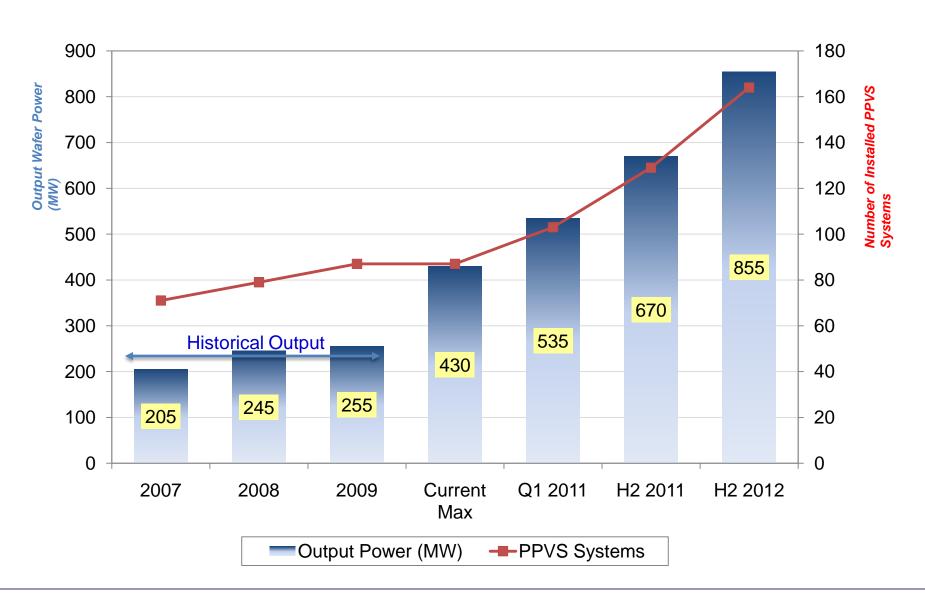




- EPIA estimates market at 16.5GW
  - more than twice level in 2009
- Strong growth driven by installations in Europe

## **Production Capacity Increase**





## **Capital Expenditure**



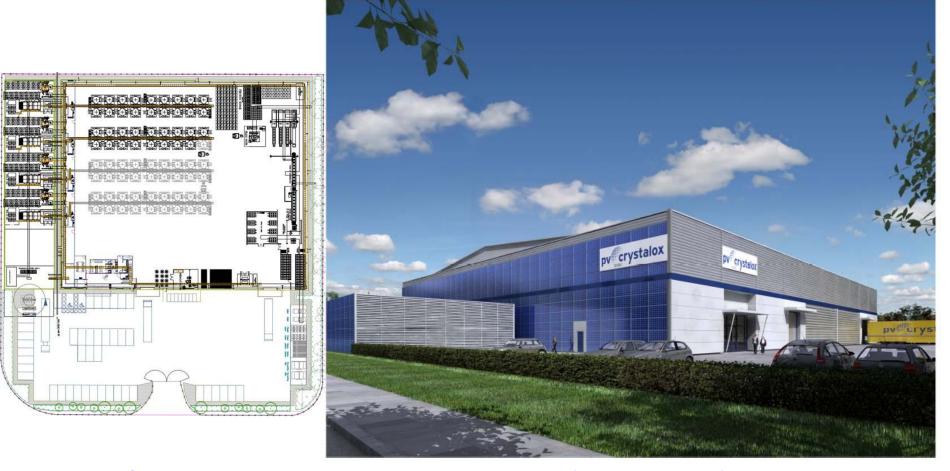
	430 MW to 535MW	535 MW to 670MW	670 MW to 855MW
	2010 – Q1 2011	2011	2012
Ingot production	Υ	<b>Y</b> *	Υ*
Blocking and wafering	Υ	Υ^	Υ^
Polysilicon plant	Υ		
Estimated Total	€25m	Up to €30m	Up to €35m
Planning Stage	Near Completion	Detailed	Strategic

<sup>\*</sup> Number of ingot production systems agreed

<sup>^</sup> Blocking and wafering capex undergoing evaluation

#### **Ingot Production Capacity Increase 670MW to 855MW**





- Construction of new facility at Milton Park (10 year lease)
  - Decision under review
  - Planning approval received
- Facility would accommodate further expansion to ultimately reach 1.0GW





## Outlook

## **Japan**



- Japan is a key geographical location
  - Major customers
  - Subcontractors
  - Suppliers
- Earthquake and tsunami impact in NE Japan
- No physical damage at customers, suppliers and subcontractors
  - All located west of Tokyo
- Initial appraisal indicates no effect on production
  - Rolling power cuts limited to Tokyo area
- 1.9m wafers shipped out of Japan on 18 March - 7days after earthquake



#### **Outlook**



- Positive market environment to continue in H1 2011
  - In advance of FIT cuts in 2011 in Germany and Italy
- Expected H1 2011 output 225-240MW
- Challenges in H2 2011
  - FIT cuts may reduce demand in Germany/Italy
  - Additional production capacity coming on stream
- Broadening customer base
  - Sales to Taiwan customers expected to exceed 25% in 2011
- Continuing 10-15% cost reduction expected in 2011
  - Higher wafer yields
  - Lower wafering costs
  - Lower internal polysilicon costs
- Capacity expansion
  - 535MW by Q1 2011
  - 670MW by end 2011
  - Expansion to 855MW by Q4 2012 under review

## **Summary**



- Strong relationships with major PV companies in Asia and Europe
- Robust cash position
- Well positioned for the long term:
  - Strong balance sheet
  - Continuing production cost efficiencies
  - Investing for growth





Q&A