

# MELBOURNE SITE ANALYSTS TOUR

Viridian - Dandenong and Clayton

30 March 2009



# AGENDA

John  
Hodgkinson

- Introduction
- Update on progress since acquisition

Howard  
Wigham

- Market overview and key demand drivers
- Importance of energy efficiency in built environment and Viridian's response

Steve Choat  
Justin Hollis

- Update on Viridian Strategy
  - Upstream bulk glass manufacturing
  - Downstream value-added glass processing

John  
Hodgkinson

- Summary and conclusion

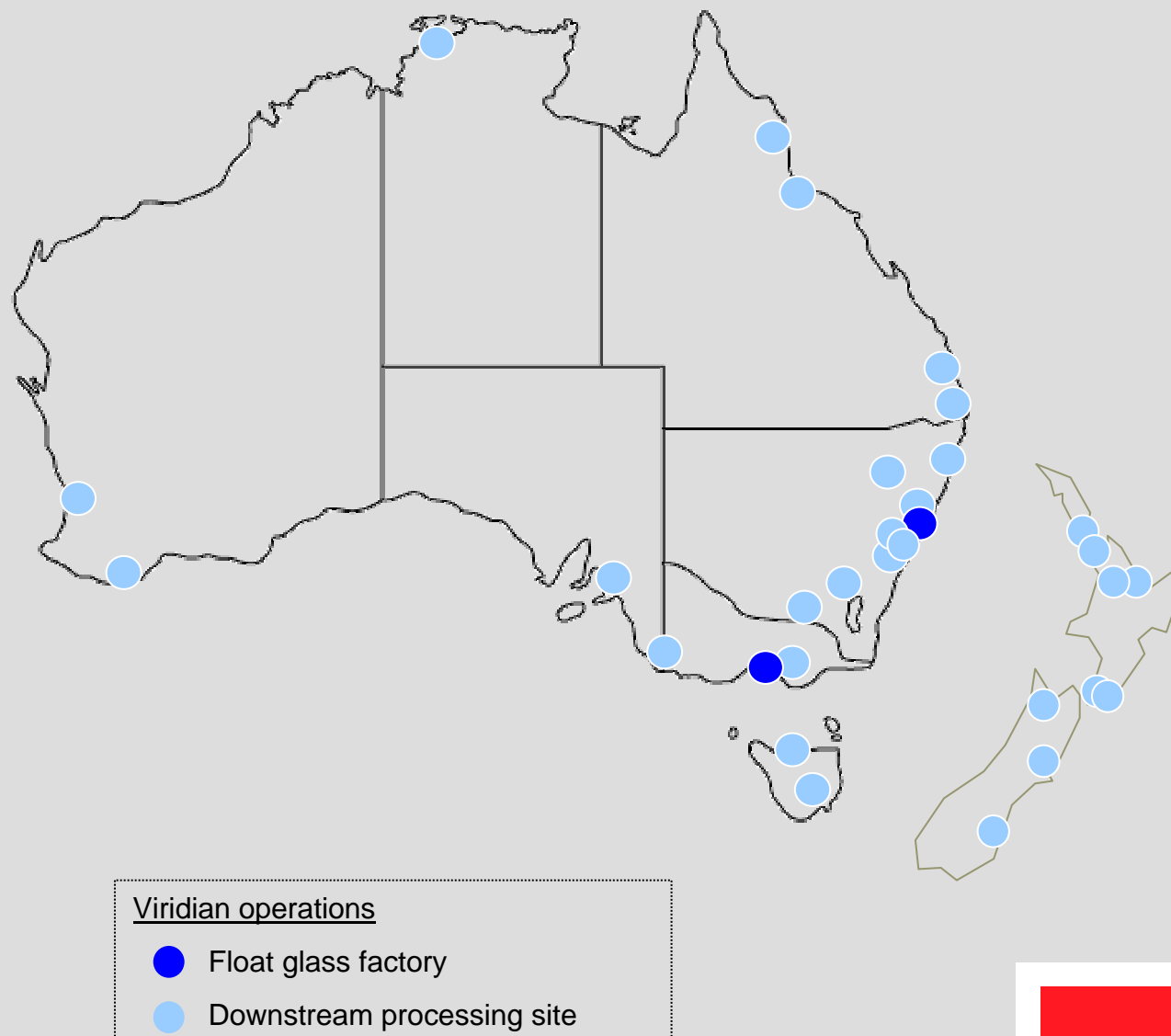
# MARKET-LEADING SUPPLIER OF FLOAT GLASS IN THE REGION

## Upstream Manufacturing

- Only domestic manufacturer of architectural glass in Australia (~60% market share) and NZ (~30%)
- 2 Australian manufacturing facilities
  - Dandenong (Vic) –165,000t
  - Ingleburn (NSW) –105,000t

## Downstream

- A leading value added processor of architectural glass in Australia (~30% market share) and NZ (~31%)
- Leading national footprint in Australia across all states
- Locations across New Zealand's North and South Islands



## OPERATIONAL ACHIEVEMENTS SINCE ACQUISITION IN 2007

### ■ Restructured Management

- New management team, new EGM
- Part of newly-consolidated CSR Building Products division with focus on energy efficiency
- Continue capture of synergies – on track to achieve \$33m in synergies by YEM10

### ■ Manufacturing Operations

- Upgrade to furnace and Dandenong floatline
- Install CVD coater at Dandenong
- Install Australia's first fully-automated IGU line at Clayton
- Implement floatliner loading and distribution system
- Closure of Alexandria and Automotive glass facilities (no value ascribed at acquisition)

### ■ Marketing/Branding

- Launch new Viridian Brand
- Implement customer acquisition programme
- Further industry lobbying with key regulatory stakeholders and industry associations

### ■ Pricing

- Price increases implemented
- Fuel surcharge introduced



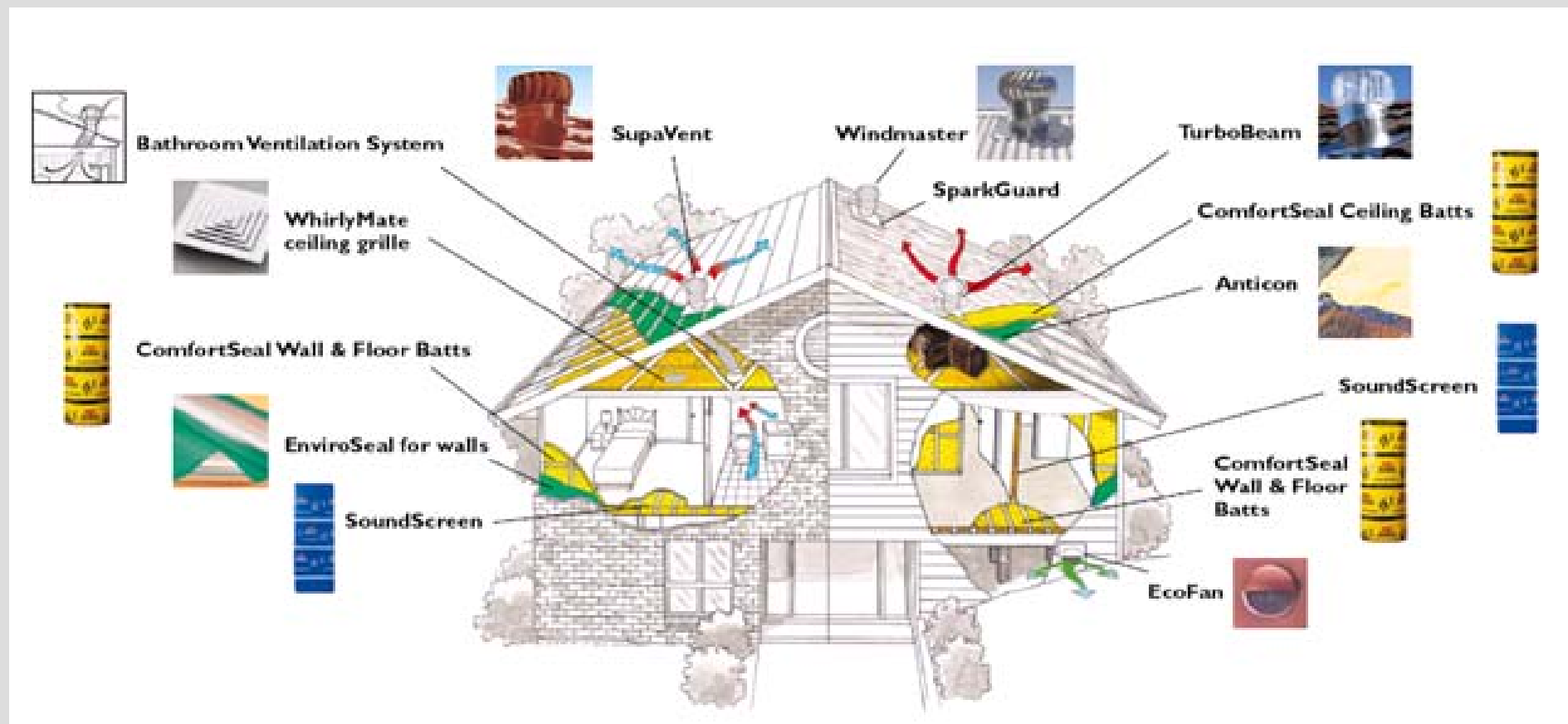
## SAFETY, HEALTH & ENVIRONMENT – A CONTINUING PRIORITY

- Lost Time Injury Frequency Rate is trending downward from unacceptably high levels pre acquisition
- Further initiatives being undertaken to address Total Recordable Frequency Rate
- Behavioural and cultural progress made with introduction of workplace Supervisory Safety Observations and management-lead safety walks
- Several environmental improvements incorporated into Dandenong upgrade
- Significant progress in transitioning to CSR systems and procedures (performance management etc)



# VIRIDIAN PART OF INTEGRATED BUILDING PRODUCTS STRUCTURE

Part of CSR Building Products' portfolio – improving energy efficiency in the built environment



- **VFloat Tones and Super Tones** – solar control
- **ComfortPlus** – Single glazed Low-E laminate
- **ThermoTech and ThermoTech E** – Insulating Glass Units (with and without Low-E glass)

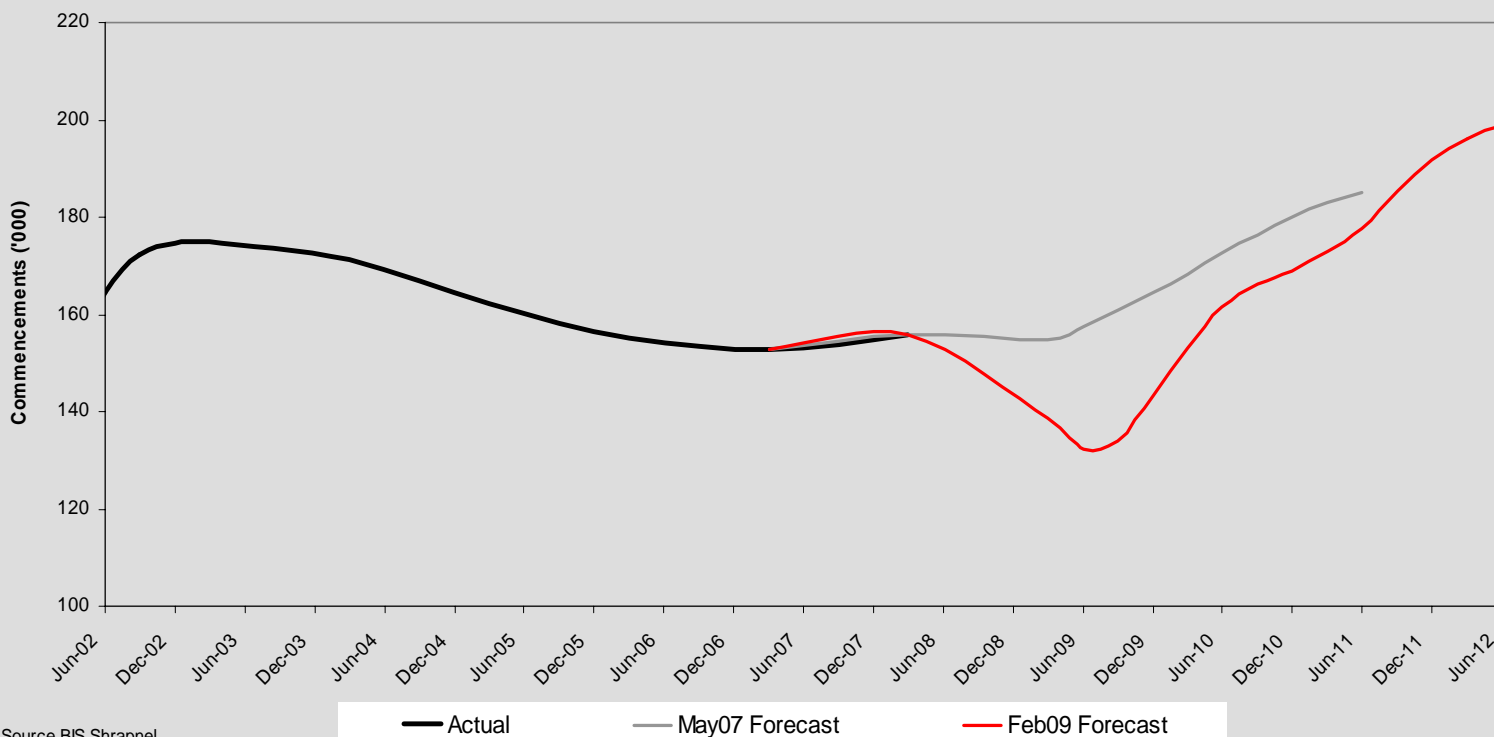
# MANAGING THROUGH THE CYCLE

- Significant market downturn post acquisition affects volume
- Residential commencements and commercial activity have declined significantly since June 2007

- **Management action through the cycle**

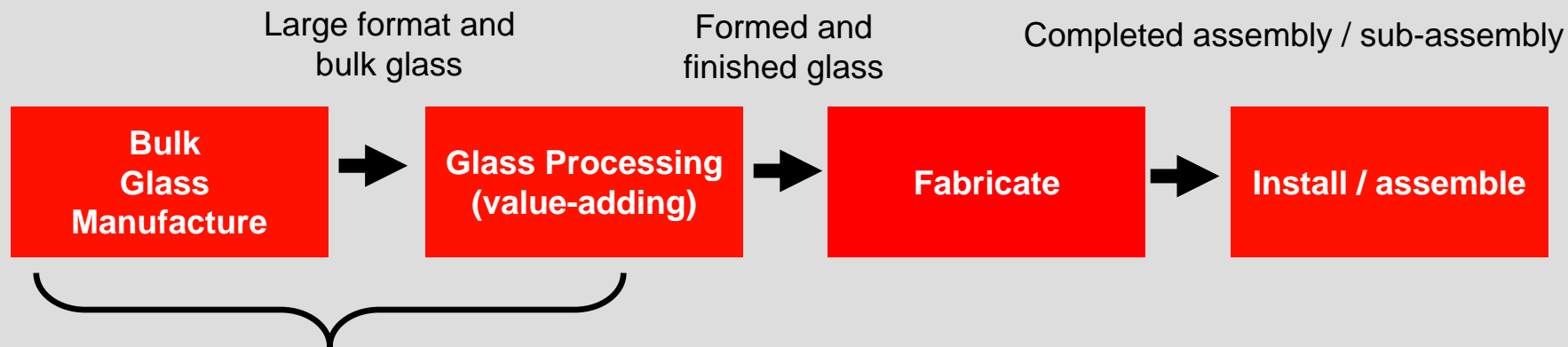
- Complete strategic review of the business
- Significant cost removal and ongoing synergy capture
- Delaying some capital expenditure and expansions
- Selective closure & idling of facilities
- Continued investment in coating & energy efficiency capability to position the business for the upturn
- **Leveraged for cyclical upturn**

Dwelling Commencement Forecasts Comparison - Australia (MAT)



Source BIS Shrapnel

# GLASS INDUSTRY OVERVIEW



**Viridian – the only fully-integrated participant in these core markets**

- Large format float glass (clear, tints, coated)
- Large format laminates and mirror
- Bulk lots of standard sized units (annealed, toughened)

Reshaping and finishing glass to meet end-use:

- Cutting
- Edging
- Shaping and drilling
- Toughening
- Laminating
- Painting/printing
- Creation of IGUs

Incorporation into higher assemblies:

- Windows
- Doors
- Curtain walls

- Installation of windows, doors, shower screens, splashbacks, balustrades, etc.
- Commercial glazing projects (curtain walls, shop-fronts, partitioning)
- On-site glazing
- Replacements/retrofits



# GLASS DEMAND - MULTI-SECTOR & SUPPORTED BY RANGE OF DRIVERS

## Case for use of performance glazing

Lift star-rating of existing house-designs (without major re-design) through use of performance windows and glazing

Performance glazing allows more flexible design and greater energy efficiency outcomes

Range of glass technologies available to suit a variety of existing window types, applications and budgets

## Sectors impacted

New Build – 1<sup>st</sup> home  
/ volume build

New Build – 2+Build /  
Arch Designed /  
Owner built

Commercial Buildings

Additions / Major  
Renovations

Replacement /  
Window upgrade

## External drivers to underlying demand and performance glazing

- Lower interest rates/improved affordability
- Population growth
- Fed Govt support for first home buyers
- Increasing energy costs
- COAG regulations to 6 star for new residences
- High level of underlying community awareness of energy efficiency
- Phase-in of mandatory disclosure of the energy efficiency of commercial buildings and tenancies from December 2009
- Fed Govt support for insulation of existing dwellings improves case for better windows
- New uses for glass

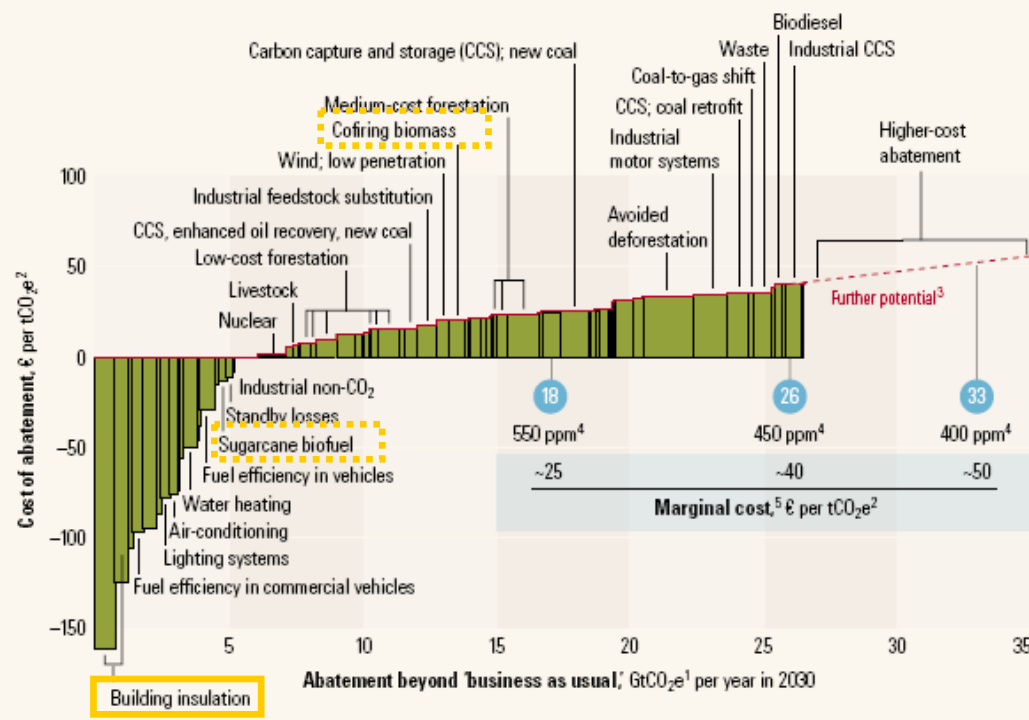
# INSULATION – COST EFFECTIVE SOLUTION TO REDUCE GHG EMISSIONS

Good building insulation (incl windows) identified as most cost effective solution to reducing GHG emissions and lower energy usage

## What might it cost?

Global cost curve for greenhouse gas abatement measures beyond 'business as usual'; greenhouse gases measured in GtCO<sub>2</sub>e<sup>1</sup>

● Approximate abatement required beyond 'business as usual,' 2030



<sup>1</sup>GtCO<sub>2</sub>e = gigaton of carbon dioxide equivalent; "business as usual" based on emissions growth driven mainly by increasing demand for energy and transport around the world and by tropical deforestation.

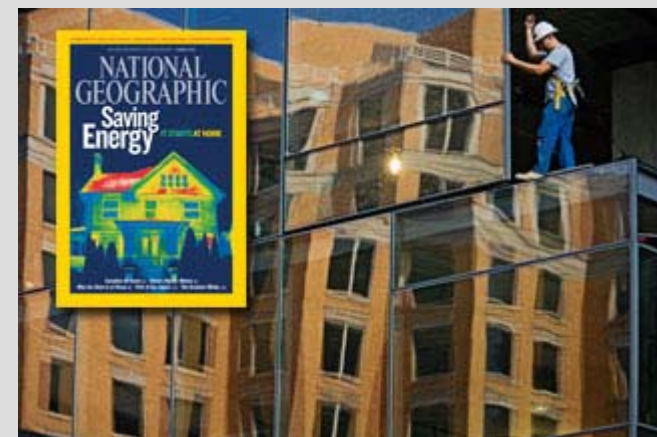
<sup>2</sup>tCO<sub>2</sub>e = ton of carbon dioxide equivalent.

<sup>3</sup>Measures costing more than €40 a ton were not the focus of this study.

<sup>4</sup>Atmospheric concentration of all greenhouse gases recalculated into CO<sub>2</sub> equivalents; ppm = parts per million.

<sup>5</sup>Marginal cost of avoiding emissions of 1 ton of CO<sub>2</sub> equivalents in each abatement demand scenario.

- Space heating and cooling accounts for around 40% of energy use in homes
- National incidence of high performance glazing in new residential buildings is ~ 10%
- Evolving consumer attitudes, recent regulatory changes and signals for further stringency around energy efficiency will increase this proportion



# REGULATION DRIVERS TOWARDS ENERGY EFFICIENT GLASS

While good progress has been made in improving building regulations, Australia lags international peers

International Comparison using Australian energy efficient rating software (AccuRate)			
Australian Climate Zones	Current Star Rating requirements	Equivalent Climate Zones	Requirements Star rating using AccuRate
Zone 1 Darwin	3.5	Florida	7
Zone 2 Brisbane	3.5	Texas	6
Zone 3 Longreach	3.5	Nth. Carolina	5.4
Zone 4 Dubbo	3.5 equiv	Arizona	7
Zone 5 Perth	5	California (Bakersfield)	7.5
Zone 6 Melbourne	5	California (San Francisco)	7.6
Zone 7 Hobart	4	UK & Canada	7.2
Zone 8 Thredbo	3.5 equiv.	Pennsylvania	6.8
<b>Avg</b>	<b>&lt;4.0</b>		<b>6.8</b>
<b>Energy efficient glass penetration</b>	<b>Australia &lt;10%</b>		<b>US ~90%</b>

**Upgrading from 4 to 5 Stars results in ~ 20% energy saving**

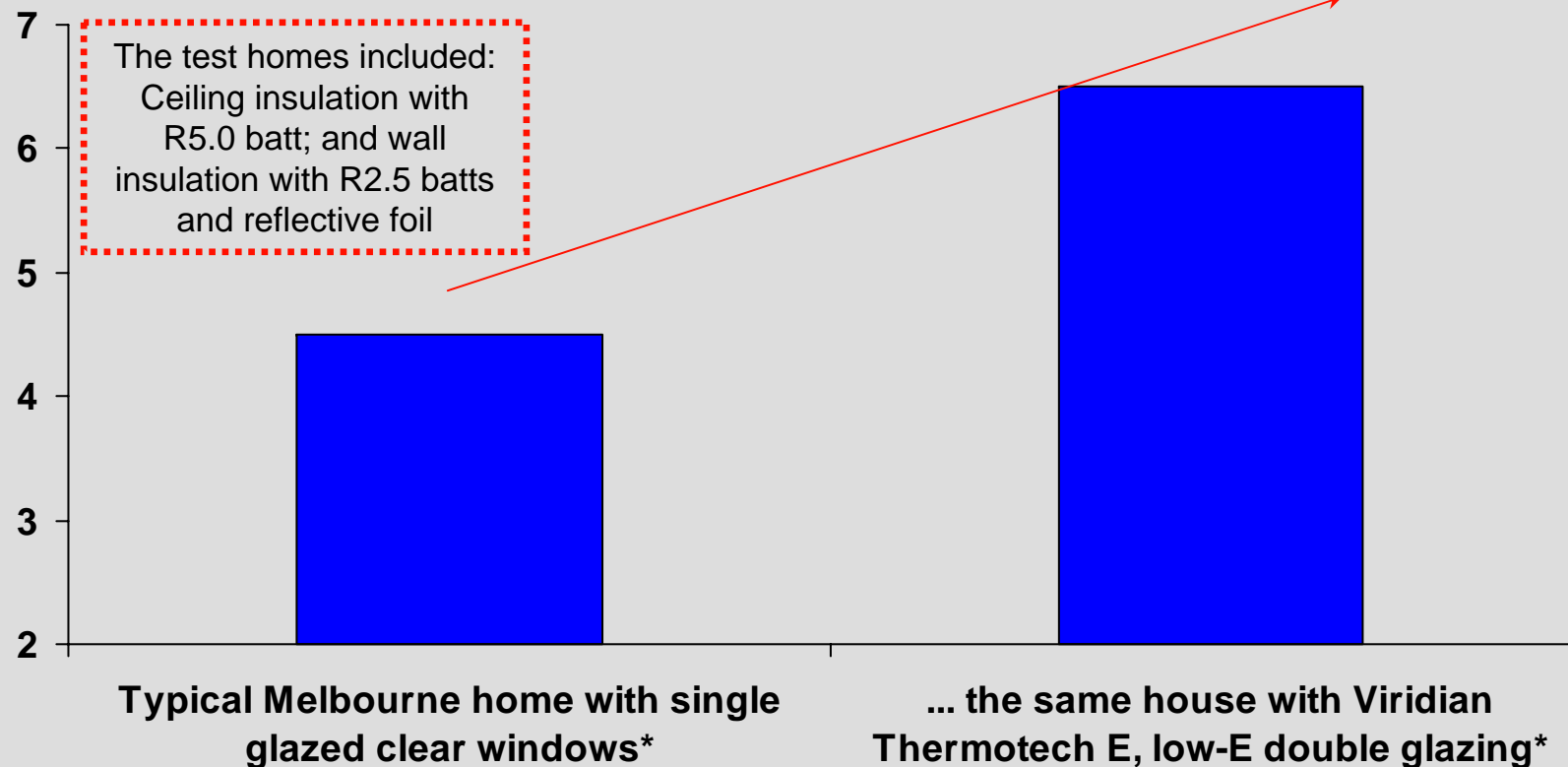
**Performance glazing alone can typically increase star rating by 1.5 - 2 stars**

**COAG requirement for new residential buildings to six stars or equivalent by 2010**

# ENERGY EFFICIENT GLASS AND HIGHER PERFORMANCE RATING

Energy efficient glass is important for residential and commercial buildings to achieve high performance rating

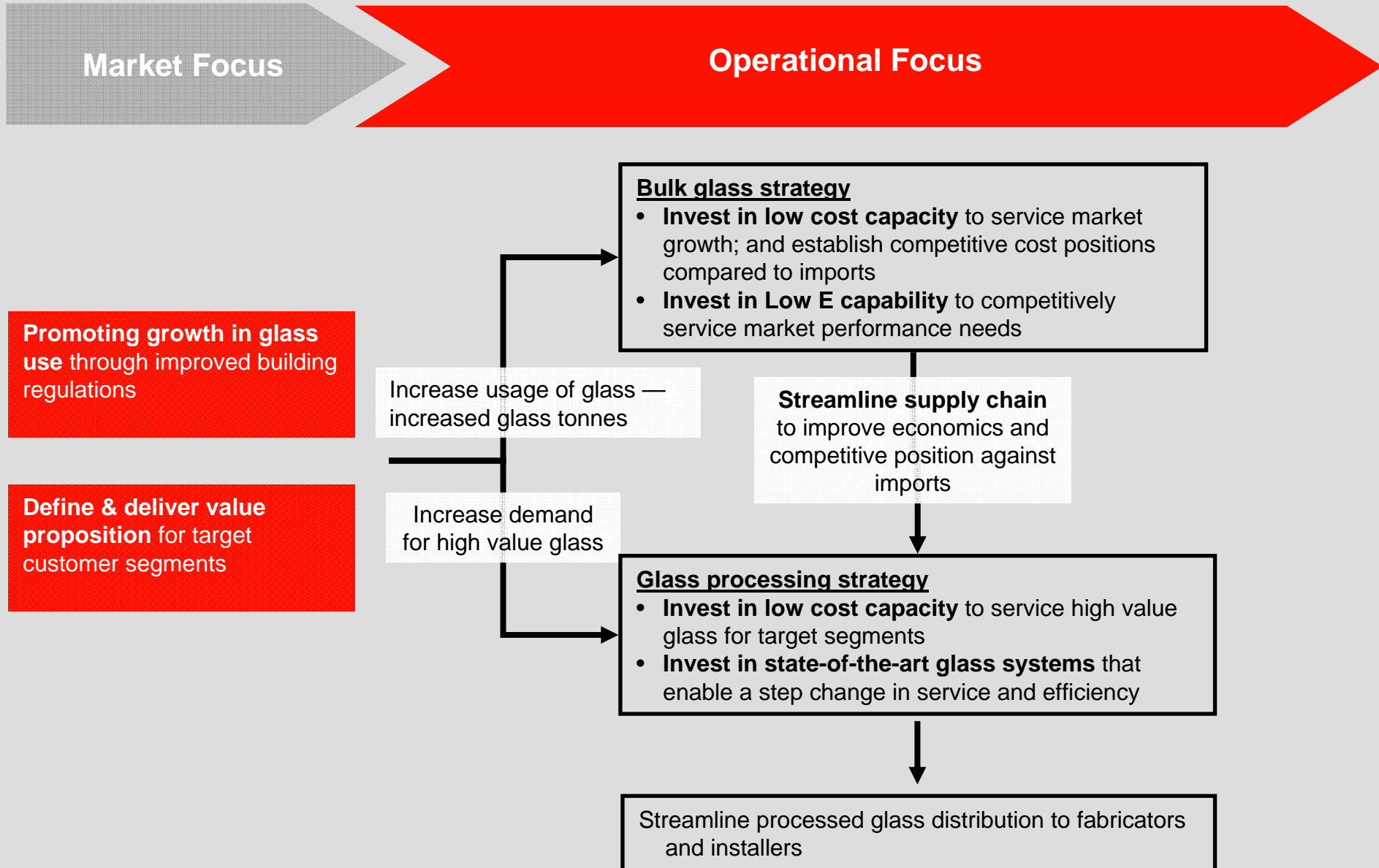
**Average detached home in Melbourne**  
Star rating



\* Windows include timber framing; and an argon cavity for double glazed units

Source: Peter Lyons & Associates, "Report to Australian Glass and Glazing Association on Energy and Environmental Benefits of Residential Insulating Glass in Victoria", Sept-07

# VIRIDIAN – BUSINESS STRATEGY ROAD MAP



## REGULATIONS AND STANDARDS DRIVE DEMAND FOR GLASS

Changes to industry regulations and standards drive a shift to a higher proportion of high-value glass

### Energy Regulations and Guidelines

#### Increased Use of:

- IGU (Double Glazing)
- Coated Glass
- 'High-tech' Glass

### Safety Regulations and Standards

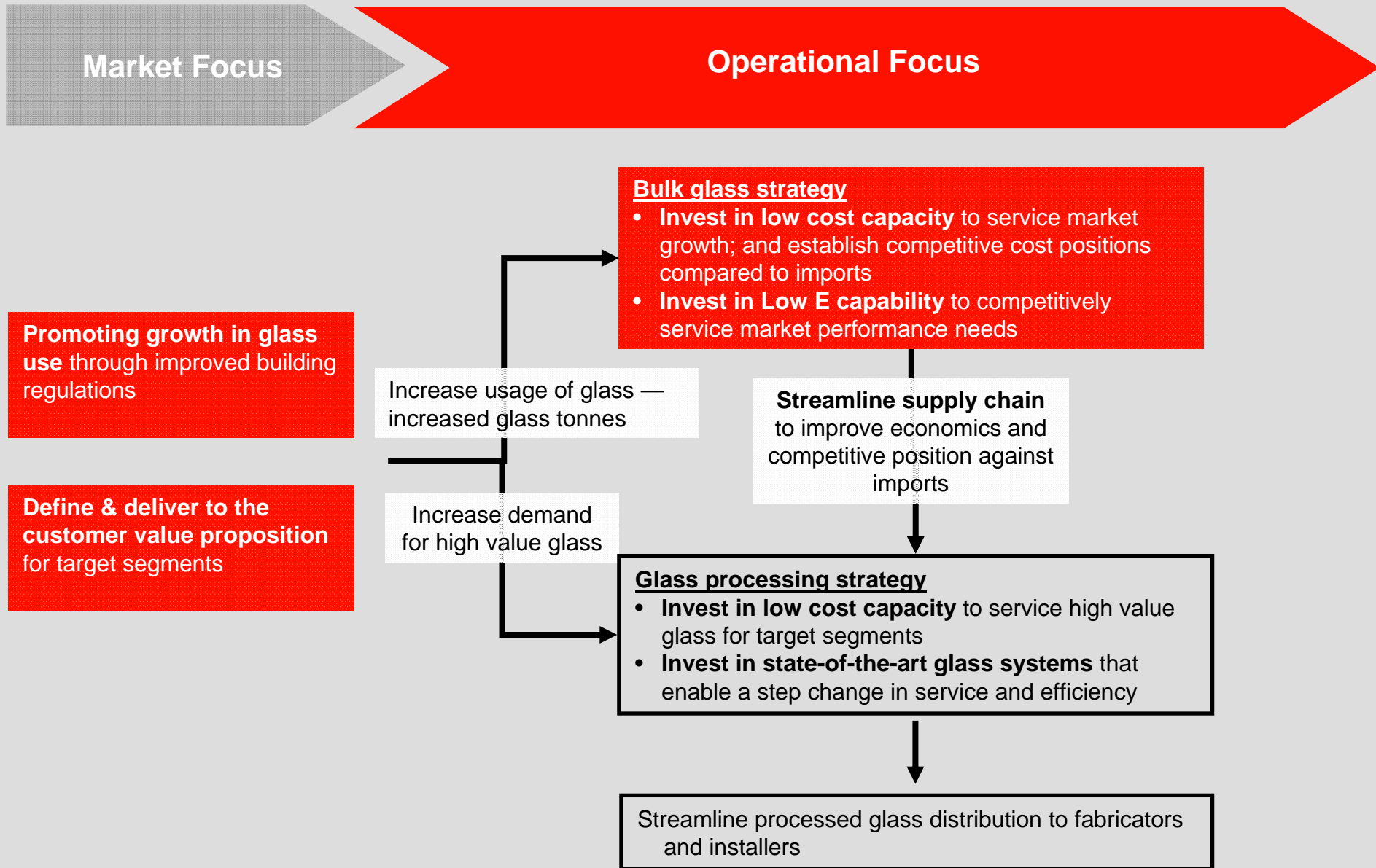
#### Increased Use of:

- Thicker glass
- Toughened glass
- Laminated glass

- The growth of the industry will materially increase

- Overall glass consumption increases
- Increase in processing demand for performance glass

# VIRIDIAN – BUSINESS STRATEGY ROAD MAP

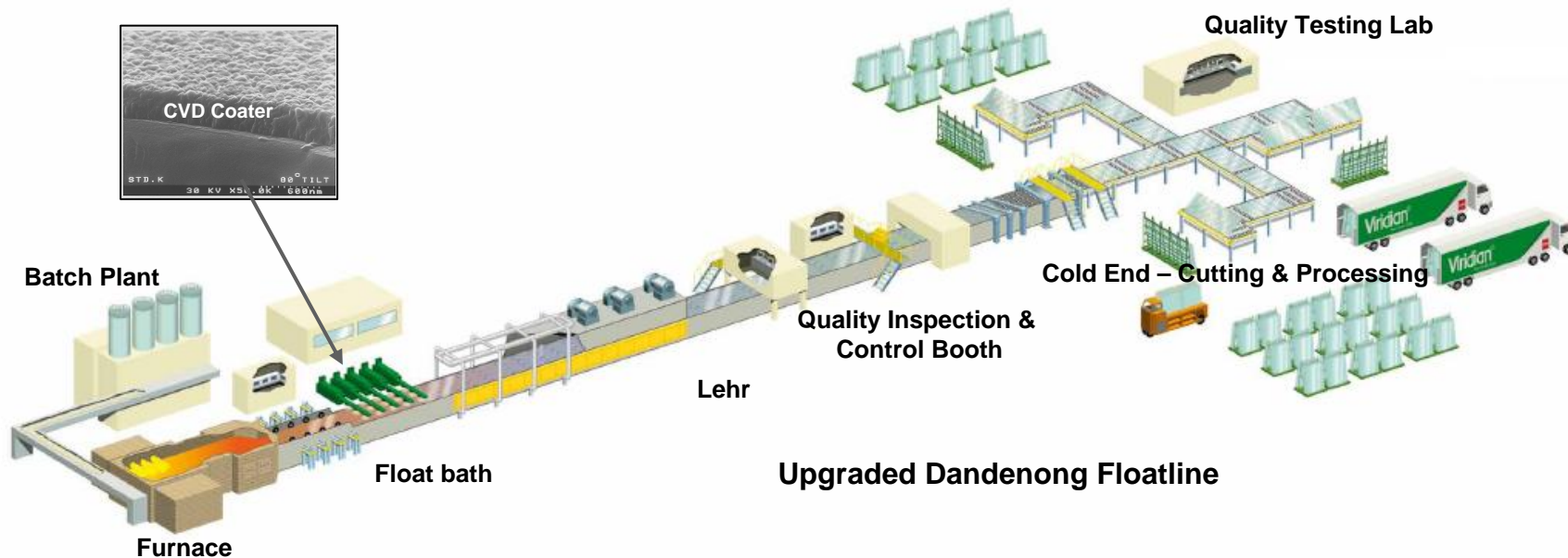


# DANDENONG UPGRADE COMPLETE

Increase low cost float glass capacity and capability to supply energy efficient glass

## Dandenong upgrade

- The upgrade is completed
  - New raw material batch plant with increased capacity
  - Furnace and line upgrade increasing plant capacity from ~120,000t to ~165,000tpa
  - High performance Chemical Vapour Deposition (“CVD”) Coater to produce energy efficient ‘low-e’ glass
- Improved cost competitiveness with imports — Upgrade has lowered cost base
- CSR is the sole manufacturer of high performance CVD coated float glass in the southern hemisphere and has one of only five Pilkington technology CVD coated float glass facilities in the world





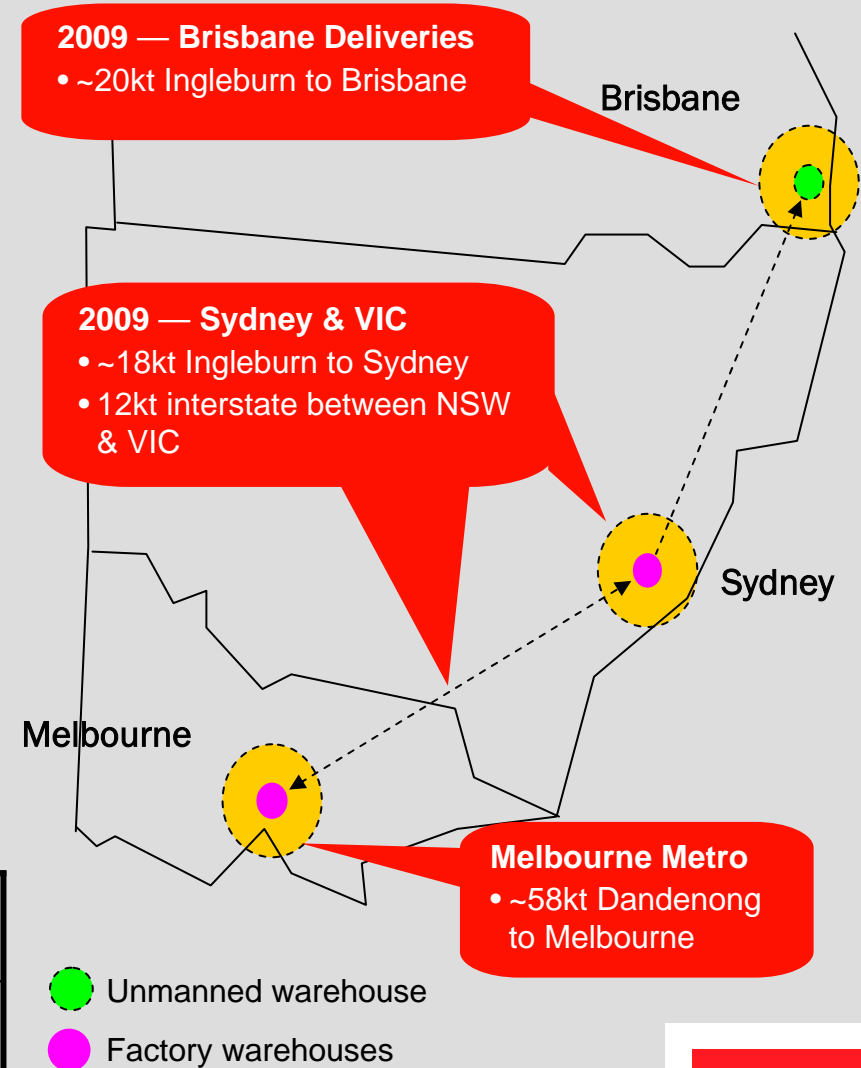
# EAST COAST FLOATLINER SERVICES ENHANCES EFFICIENCY

Improve customer service, productivity and differentiation

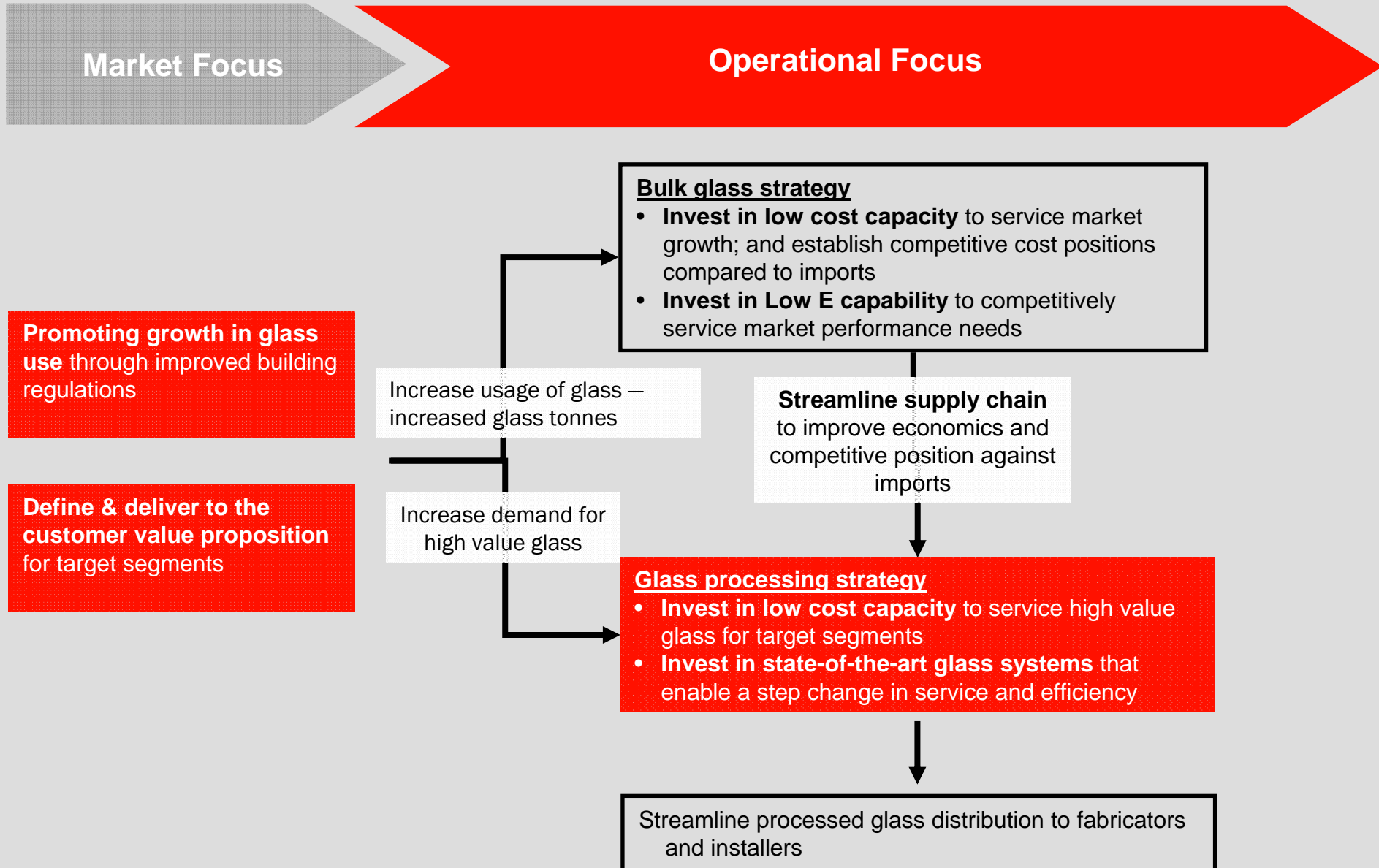


- Greater efficiency – rapid load/unload
- Increased safety
- Ability to integrate into customer manufacturing process
- Reduced accidental damage of glass
- No packaging waste materials

Beneficiary	Measure	Existing method	Floatliner method	Benefit
Viridian (loading)	Man hours	~6.5	~0.5	~6.0
Customer (unloading)	Man hours	~3.0	~0.5	~2.5



# VIRIDIAN – BUSINESS STRATEGY ROAD MAP

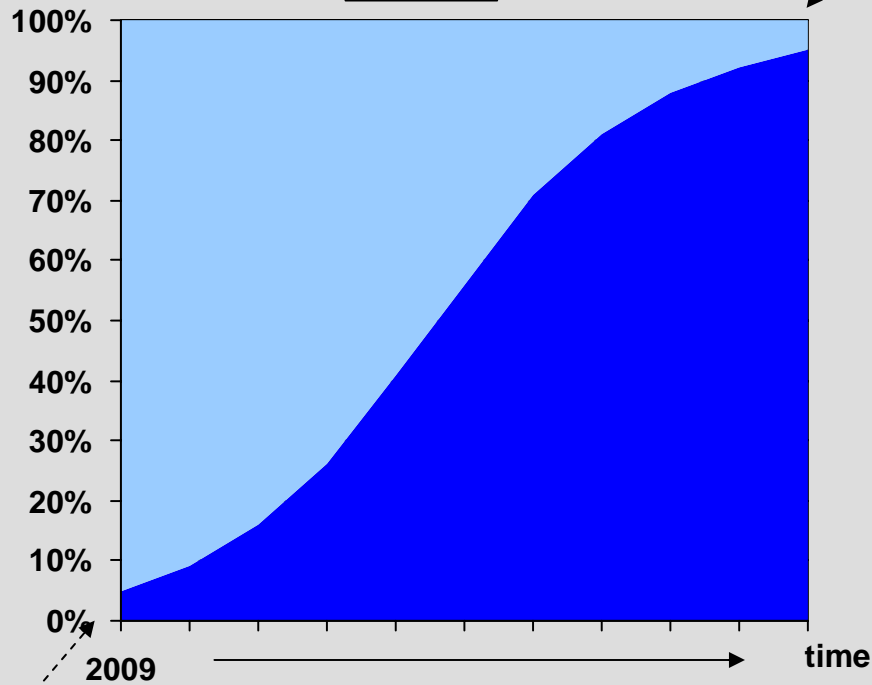


# DEMAND FOR PRIMARY GLASS PRODUCTS

Demand for primary glass products increase with the uptake of Insulated Glass Units

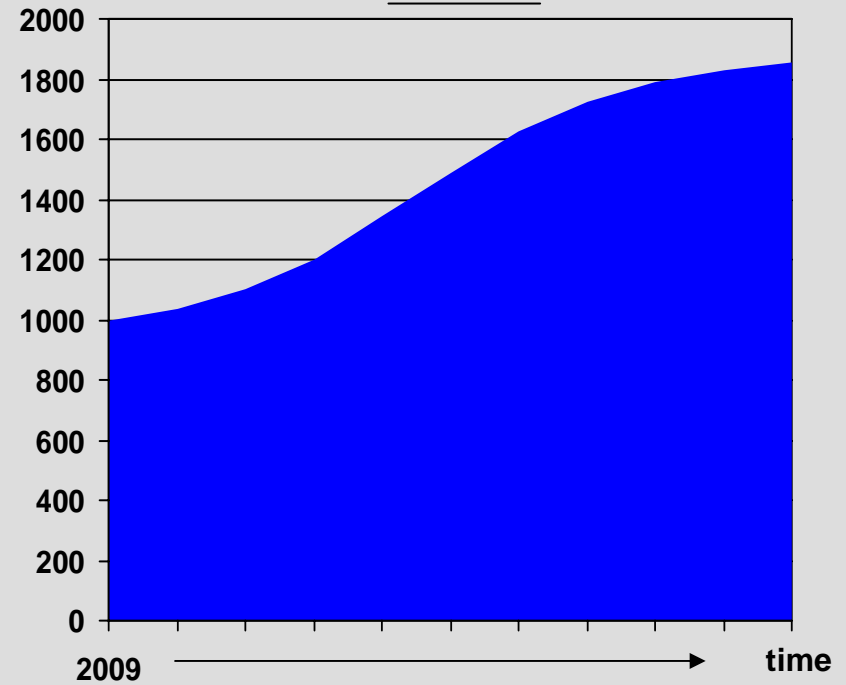
**Glazing area**  
Percent

Illustrative



**Glass demand — indicative growth in tonnes**  
Indexed, 2009 = 1000 [tonnes]

Illustrative



Current penetration of IGUs in residential applications in Australia is less than 10%.



## VIRIDIAN DOWNSTREAM'S OPERATIONAL FOCUS

Viridian downstream's operational focus is to service target segments at the lowest cost

### Market segment focus

**Residential  
Fabricators**

**Commercial Fabricators**

**Partitioners and  
Shop Fitters**

**Shower screens &  
Wardrobes**

### Aligned operational processing focus

**Energy efficient windows — IGUs and cut-to-size glass:**

- High volume processing operation – long runs of similar / simpler shapes
- Relatively lower value glass
- Customer demands reliable Delivery in Full and On Time (DIFOT)

**Complex / quality customised glass**

- Batch shop operation — Shorter runs of more complex shapes
- Thicker glass — safety and feature glass
- Lower volumes / higher value
- Customer demands high quality (defect free, correct dimensions and finishes etc.)

## AUTOMATED IGU FACILITY LOWERS DELIVERED COST

- Clayton upgrade will allow Viridian to
  - Improve customer service
  - Improve product quality; and
  - Materially lower delivered cost
- Sydney upgrade is on track
- Working to re-align the network to better leverage the capabilities of the major sites
- CSR Building Products has developed propriety technology to improve distribution of glass

The manifestation of our capability shift:

- Previously we touched glass 15-40 times during processing
- Moving forward the first human hands to touch the glass will be our customers

## CONCLUSION

- Significant progress since acquisition to integrate Viridian into CSR Building Products division
- Completion of furnace rebuild, installation of coater and automated IGU line provides key competitive advantage for Viridian to be cost competitive in glass market
- Viridian remains very well placed to capitalise on increased demand for energy efficient and performance glass driven by
  - enhanced environmental regulatory standards
  - safety standards
  - consumer preference
- Improved logistics solutions (Floatliner) further enhances low cost production profile
- Clear management focus to minimise the impact of the current downturn and position the business for the cyclical upturn