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Power costs and the U.S. aluminum industry

January 18, 2011

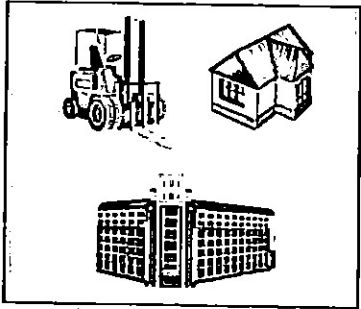
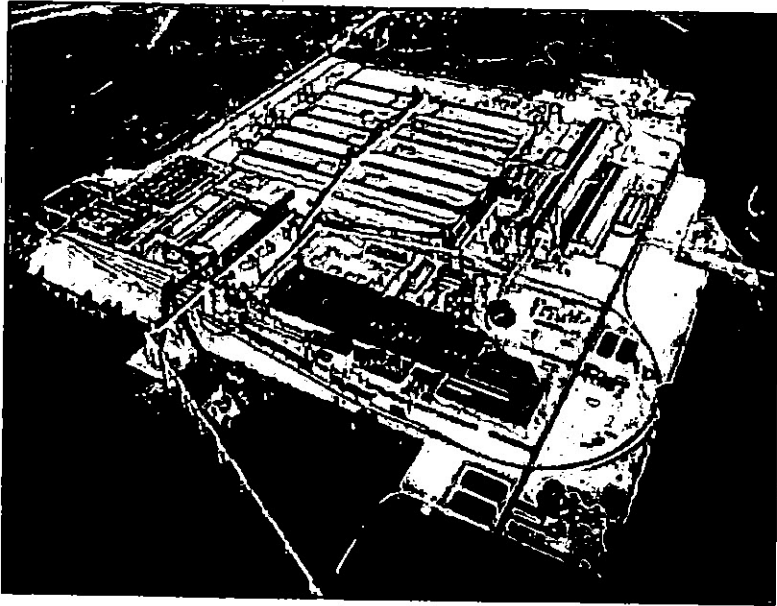
Structure of BREC sales

Smelters represent 70% of Big Rivers load

Smelters
7300 GWh / 850MW

Members
3500 GWh / 350MW

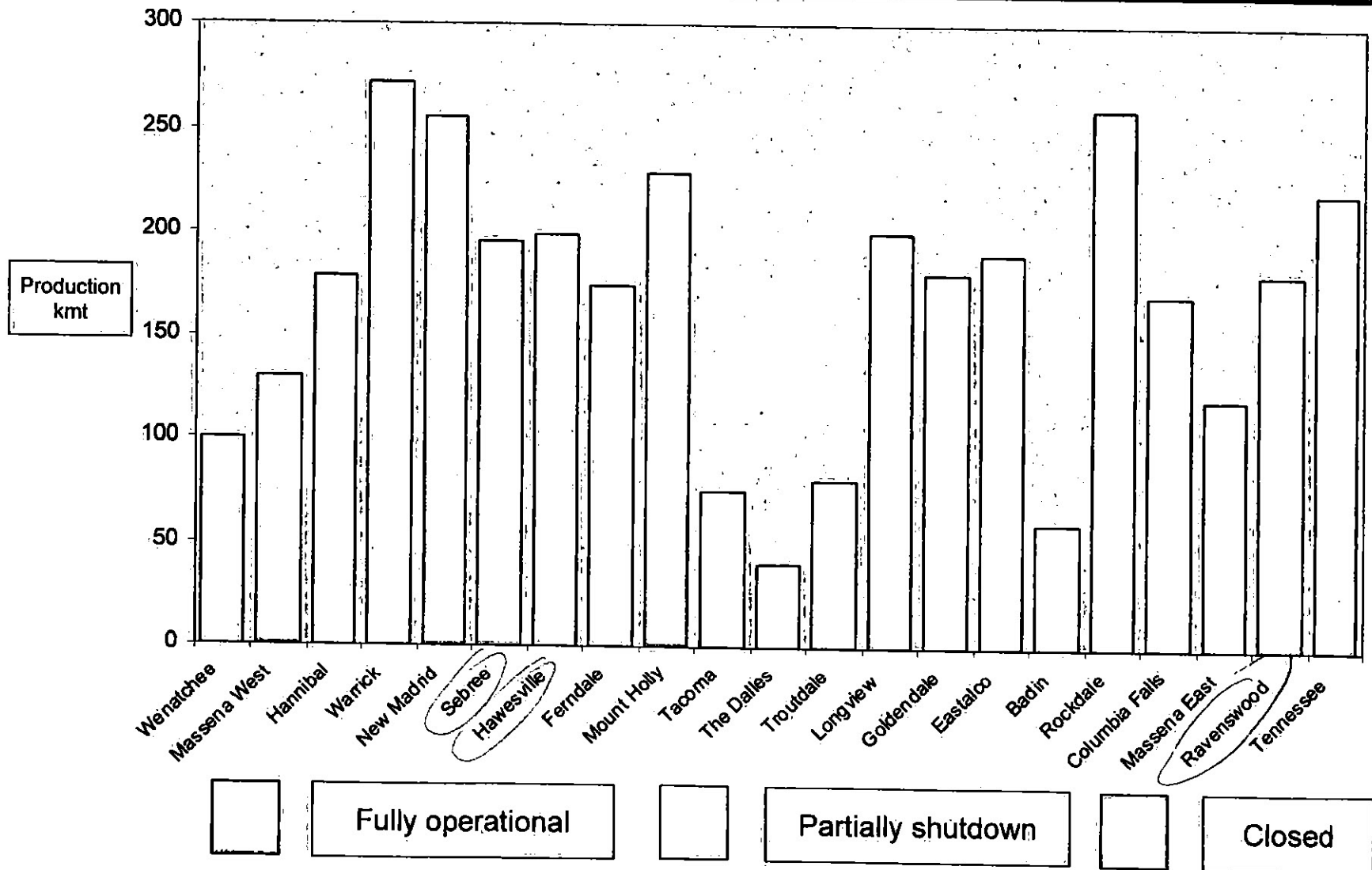
Market
1200
GWh



U.S. aluminum industry overview

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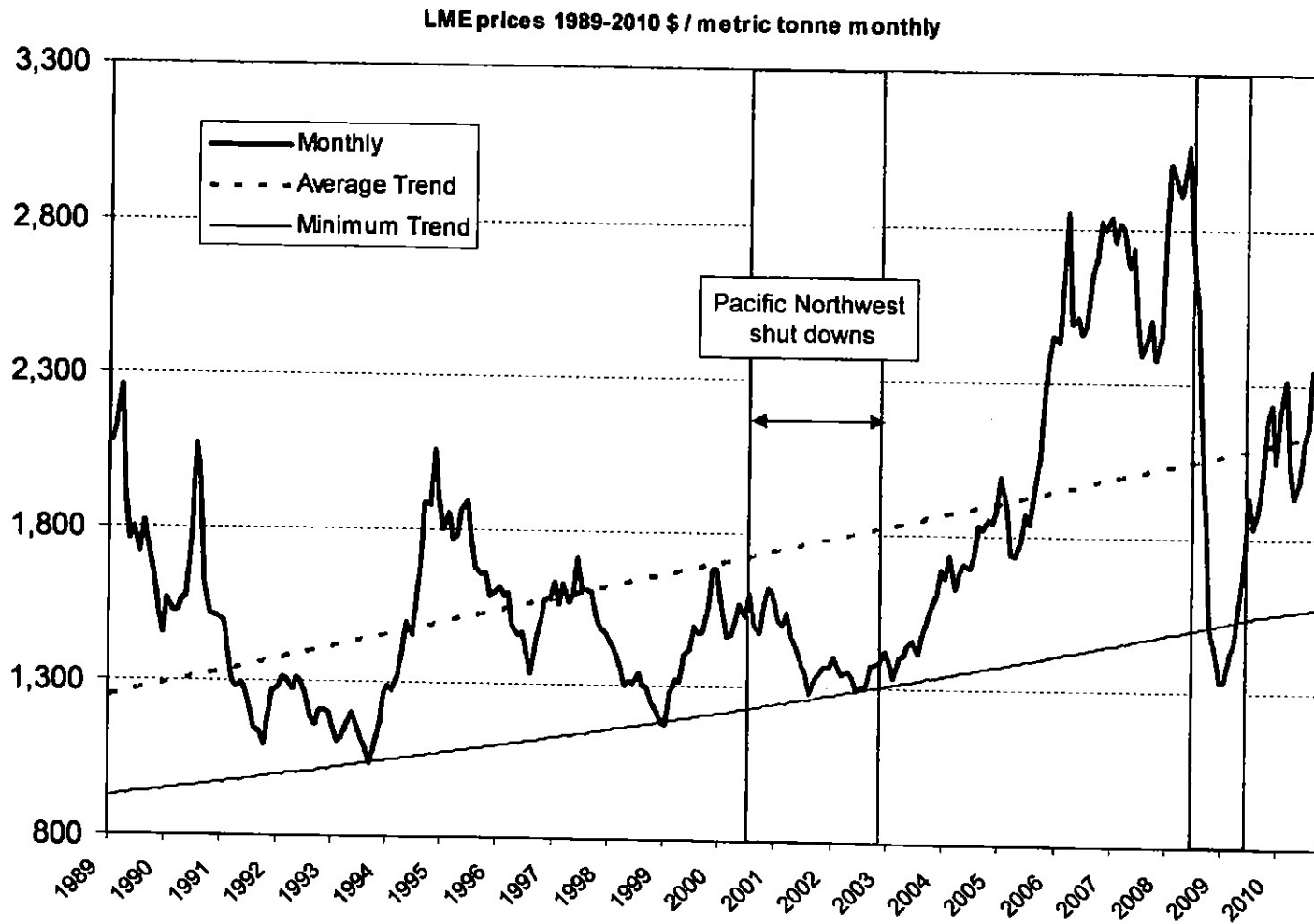
Four facilities currently operational at 100%, five facilities curtailed. At least 12 shut down in last 10 years, mainly in 2000-03 and 2008-09.



Aluminum prices since 1989

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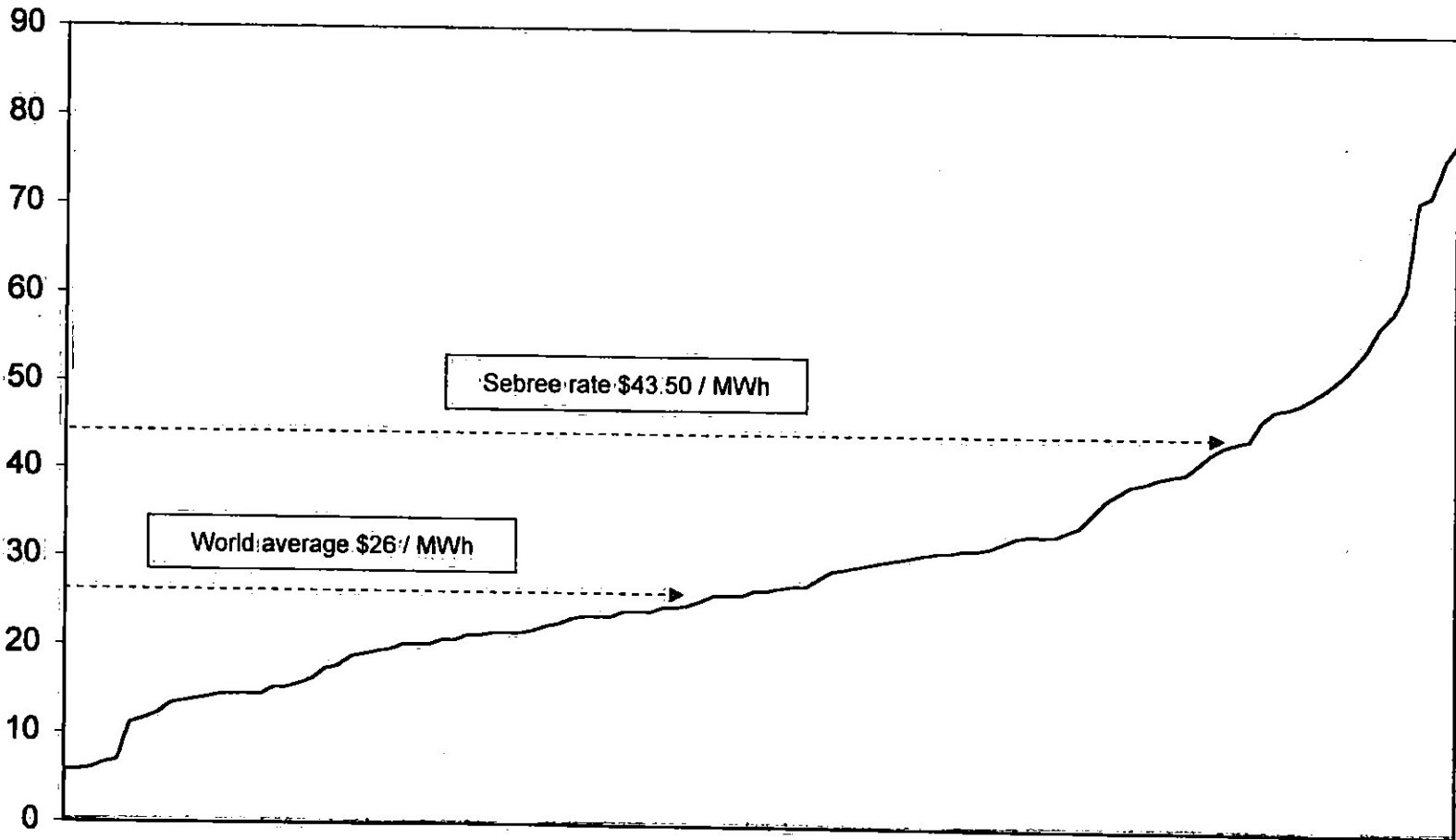
The market for aluminum is highly cyclical.



Worldwide smelter power costs 2010 US\$/MWh

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Smelter power cost is \$43.50/MWh compared to global average of \$26



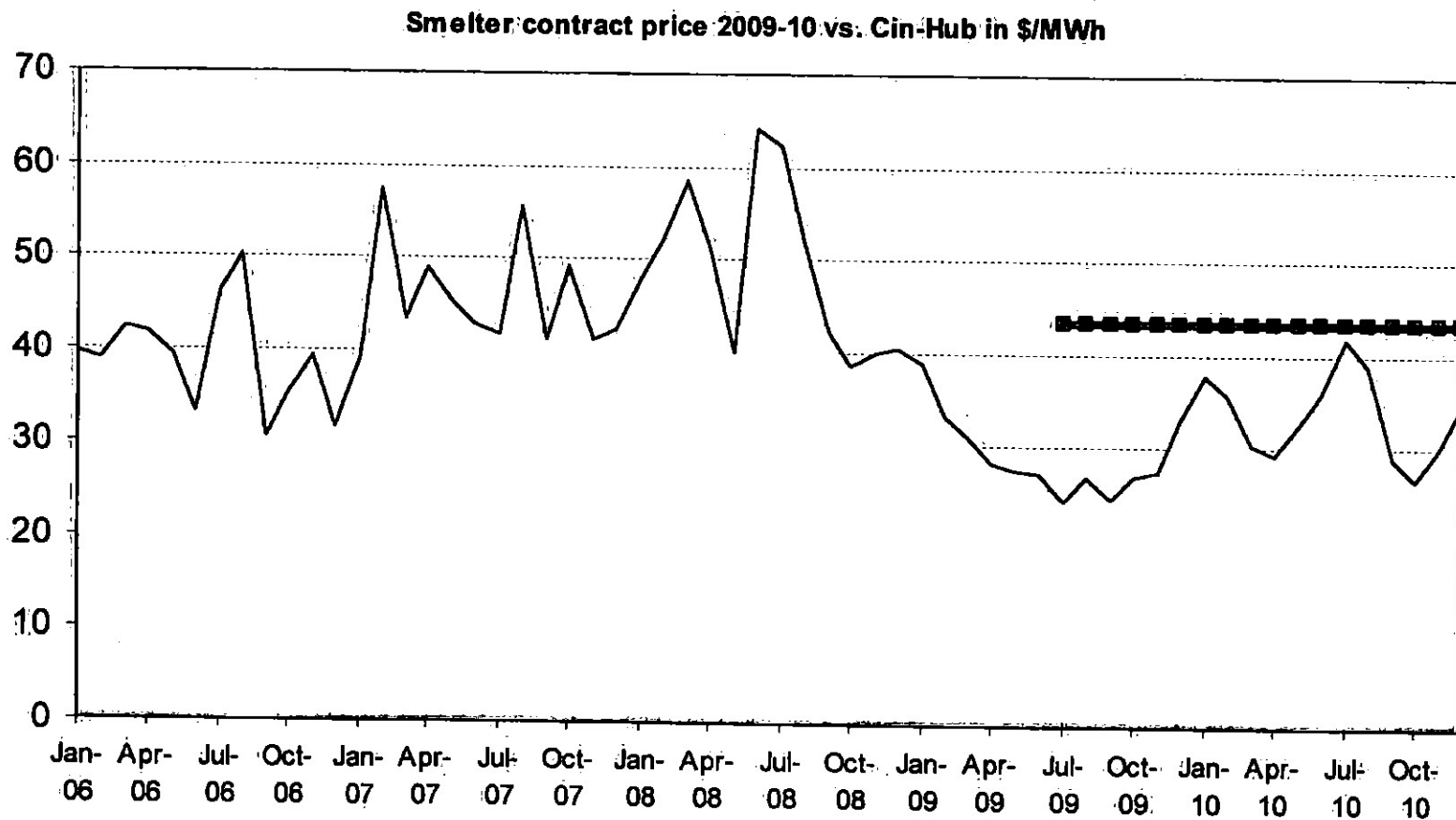
Approx. 110 smelters

Source: CRU. Excludes China.

Comparison to market price

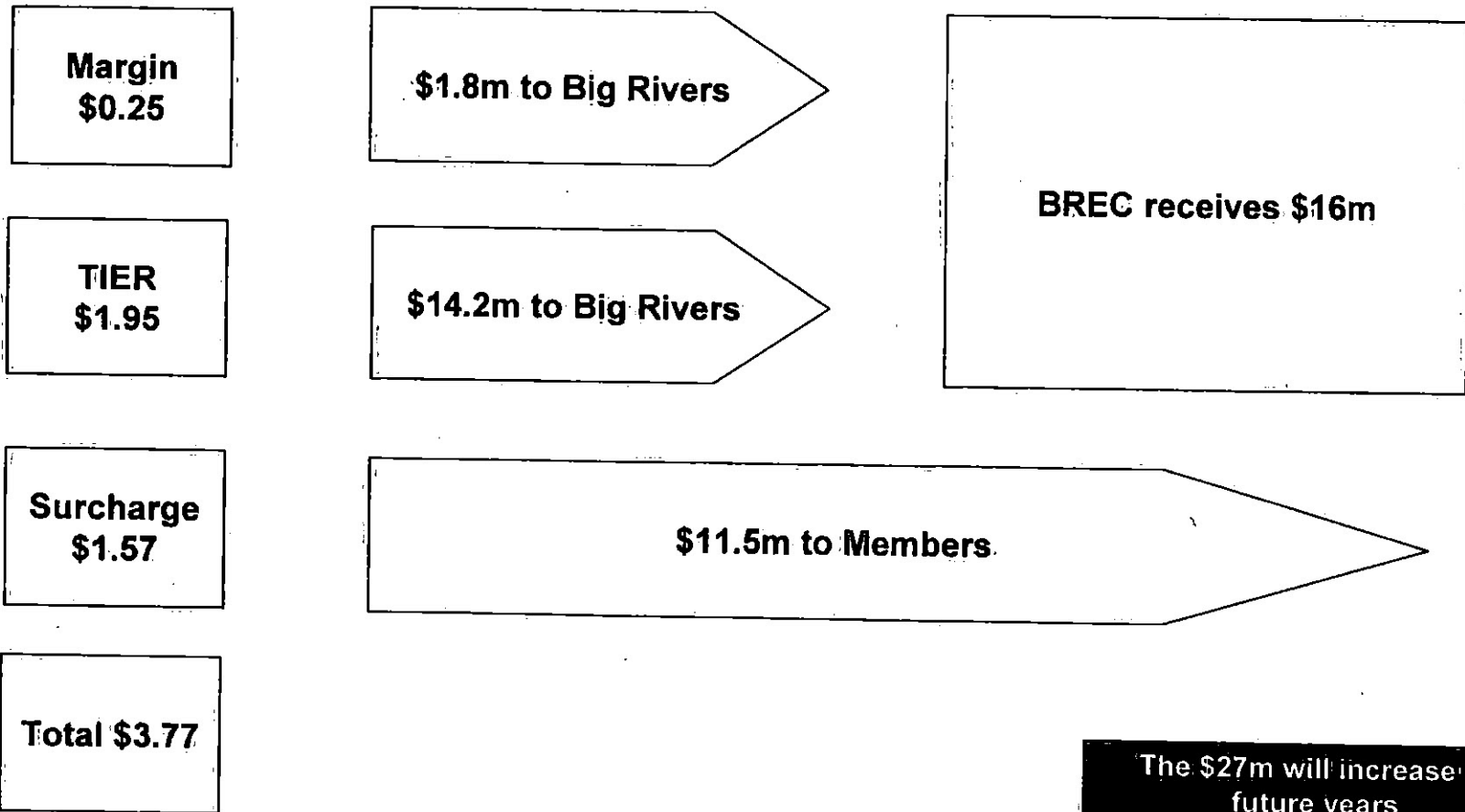
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Smelter contract price compared to MISO Cinergy-Gibson hub



Smelter support to Big Rivers

**Additional \$27m support from Smelter to Big Rivers + Members.
This equates to \$7.50/MWh if spread over the Member load.**



The \$27m will increase in future years

Advantages to BREC and members of smelter business

Smelter baseload reduces operating and financial risk to Big Rivers.

- Near-constant 7*24 baseload suitable for coal-fired power.
- Allows a larger generation network to be maintained than would otherwise be the case (increased flexibility and stability with reduced uncertainty).
- Direct pass-through of non-fuel purchased power cost
- Smelter loads can protect against system blackout in extreme conditions (such as 2009 ice storm).
- Contract price is more stable than the power market
- Aids Big Rivers borrowing ability (Big Rivers must borrow from the commercial market, not RUS)

Conclusion

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The success of the Smelters is essential for the financial health and survival of Big Rivers and financial stability of the Members.

- Rio Tinto Alcan smelter at Sebree is a significant contributor to the operational and financial stability of Big Rivers
- Absence of the smelters would result in a major rate increase to the Members
 - Smelters support to Big Rivers of \$27m annually reduces Member rates by \$7.50 / MWh
- The smelter competes in a global marketplace which is highly cyclical
- Much of the U.S. aluminum industry has closed since the year 2000, due to high power costs
 - most of those still operating have self-generated power or have special contracts or other regulatory treatments that keep costs low or track the LME.
- Sebree has reduced its own cost base by \$30m (excluding power) since 2008.
- The coming years will be a significant challenge for the Sebree smelter to remain competitive and avoid closure.