



A U S T R A L I A N
A L L I A N C E T O
SAVE ENERGY
Creating an Energy-Efficient Australia



Re-energising Australian Manufacturing



Doubling energy productivity by 2030 to improve the competitiveness of the manufacturing sector



November 2014

Concepts for discussion

Draft version 1.0

Executive Summary Only

The full text of this paper, including references, is available at 2xEP.org.au



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The views expressed in this text are those of A2SE and not necessarily those of our supporters and partners. All responsibility for the text rests with us.

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Executive summary

Like other developed economies, Australia has seen its manufacturing base erode. Improvement will depend on cost efficiencies, particularly management quality; higher labour mobility; and a shift to innovative manufacturing, which offers the best long-term potential for competitiveness.

(Taylor, Bradley, Dobbs, Thompson, & Clifton, 2012)

This report was prepared to review the key issues that need to be dealt with to double energy productivity in the manufacturing sector in Australia by 2030. The report also provides a discussion starting point for the Manufacturing Sector 2XEP Team. This team will lead the development of the manufacturing sector 2XEP Roadmap to focus on the opportunities, barriers, policy recommendations and proposed implementation plan for 2XEP in the manufacturing sector.

Why focus on energy productivity?

The rationale for Australia adopting an energy productivity target is strong:

- Overall productivity in many market sectors, including manufacturing, has been flat or declining in recent years.
- Australia's energy productivity lags that of other G20 countries, and is increasing at a lower rate.
- Energy prices have risen steeply relative to other nations, eroding what was once a competitive advantage for Australia.
- Manufacturing remains a major employer and large energy user, and the response of the sector to improving productivity, including energy productivity, will shape its future competitiveness.

The 2XEP initiative

In response to these factors:

- 2XEP proposes doubling energy productivity across the economy by 2030. This approach is in line with other major economies – and needs to be achieved to avoid entrenching the competitive disadvantage that has emerged in recent years from rising energy prices and other factors.
- The appropriate target for the manufacturing sector is to be established by the Manufacturing Sector 2XEP Team. Doubling energy productivity in the manufacturing sector would imply a target reduction in final energy consumption of 280 PJ in 2030 compared with current projections for 2030 (i.e. baseline estimate). This is an industry level annual saving of approximately \$5 bn per annum by 2030.

The potential to achieve this target will be ascertained through an assessment of key efficiency opportunity areas, including:

- 'Traditional' energy management (including energy use technology improvements).
- Systems optimisation (focusing on energy aspects of supply chain optimisation, lean manufacturing and other capacity optimisation strategies).
- Business model transformation – the energy aspects of fundamental longer term business change – design and manufacturing.

CONCEPTS FOR DISCUSSION DRAFT VERSION 1.0

*Benefits from 2XEP
for manufacturing*

The benefits of achieving 2XEP in the manufacturing sector will include:

- Energy cost savings of \$5 bn per annum by 2030 for manufacturing companies. This will significantly improve energy competitiveness.
- Multiple dividends in terms of reduced maintenance and labour costs/unit of output, with a likely multiplier of up to 2.5 times the benefits directly attributed to energy savings.
- An annual reduction in carbon emissions of approximately 48 MtCO₂e by 2030.

*Manufacturing
program objectives*

A successful outcome from this roadmap process will deliver:

- An understanding of the optimal path to doubling energy productivity for the sector.
- A plan for industry to lead/drive changes in the sector and individual businesses to achieve 2XEP.
- An understanding of emerging R&D innovations that can help manufacturing sub-sectors now achieve a step change in energy efficiency.
- Business opportunities through more energy efficient product design for the sector to address key gaps in the global market.
- The initiation/strengthening of specific programs to support businesses to achieve 2XEP.
- Recommendations adopted by State and Commonwealth governments to enact policy changes to facilitate these activities and support 2XEP in manufacturing.
- A collaborative process between all participants in the market with government to accelerate innovation, transformation and value adding in the sector.

*Benefits of
participation in the
roadmap process*

Participation in the roadmap process offers industry associations and businesses:

- The ability to share and learn best-practice techniques for improving productivity through peer-to-peer association.
- Business brand recognition through association with the roadmap process and specific programs that may emerge from the process e.g. voluntary commitment and recognition programs.
- Improved energy productivity and competitive advantage. The average participating company will improve its energy productivity by 1.4% per year over the next 20 years, saving 32% of energy consumption/unit of output by 2030.
- Improved access to best-practice productivity techniques and tools, individualised for specific industries.
- The ability to effectively integrated energy productivity into organisational improvement business cases.
- Potential for early participation in recognition, continuous improvement and other programs launched from the roadmap process.
- The opportunity to demonstrate leadership in Australian manufacturing.