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D/Chair



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Approaches for Doubling Energy  
Productivity in Industry

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*Also see my Linkedin page*

2xEP= Double energy productivity by 2030 (2010 base).

EP is value gained from using a unit of energy.  
\$value added/GJ

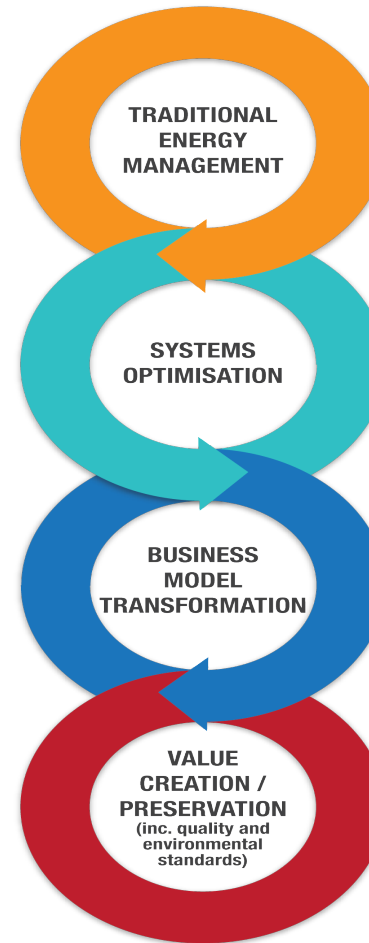
**Achieved by increasing value AND decreasing energy to deliver services**

- It is overall value proposition, not just technical efficiency of equipment.
- We aim to improve overall productivity using an energy focus to deliver:
  - Improved business competitiveness and jobs
  - Improved affordability for consumers
  - Reduced C emissions



## Elements of EP

Driving increased total  
value using energy lens



## e.g. Manufacturing

Energy efficient plant and equipment  
Metering, reporting and benchmarking  
Improved maintenance practices

**Traditional  
energy  
management**

**Systems  
optimisation**

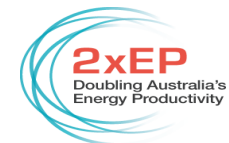
Lean manufacturing (LEP\*)  
Process change / optimisation  
Capacity optimisation  
Waste reduce/circular economy  
Optimising supply chain

**Business model  
transformation**

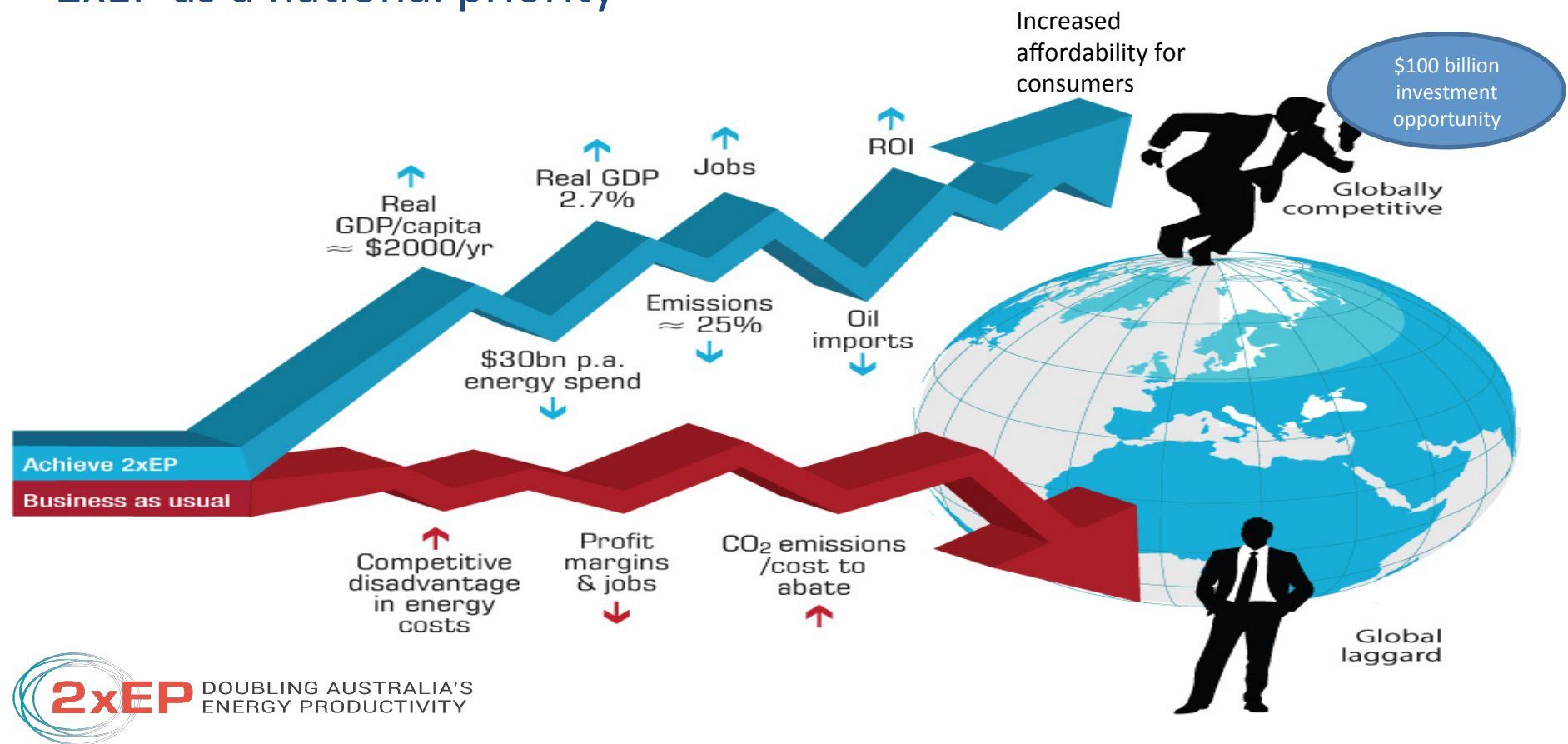
Additive manufacturing/3-D design  
Advanced materials  
Process intensification

**Other Value**

e.g.  
environmental,  
quality

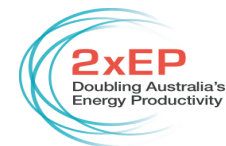


## 2xEP as a national priority



## Political Environment in Australia for EP

- National Energy Productivity Plan agreed December 2015.
- Target set at 40% improvement in EP by 2030 from 2015 base (equivalent to say 55-60% from 2010 base year).
- Comprehensive plan with over 30 major measures
- BUT the plan still lacks detail and is largely unbudgeted
- Australia has committed to 26-28% reduction in GHG emissions by 2030 (same number as US target for 2025).
- DOEE is starting review of Australia's climate policies.
- ARENA mandate to be expanded to include EP R&D but government wants to cut the budget



## The 2xEP Challenge

- Leaders' program to shine the way for other companies
- Corporate commitment vs recognition and support.
- Targets align with international EP100 commitment program.
  - 2xEP by 2030 or
  - 2.5% annual increase in EE
- Report publicly annually against milestones
- Plan for pilot from March 2017



## The 2xEP Challenge Pilot

- Up to 30 company pilot
- For companies wanting to show leadership
- Test program design concepts, case studies of success, and companies sign the commitment. Basis for full scale rollout.
- To be piloted in:
  - Manufacturing
  - Non-property commercial buildings – universities, hospitals, hotels, retail
  - Freight – large scale and mid-sized operators, with focus (but not exclusively) road
  - Mining and agriculture eligible but not targeted





## 2xEP Challenge Design Issues

- **Targets:** EP/Energy Intensity, supplementary C target possible. Not water, waste, material efficiency at this stage.
- **Integration to avoid commitment overload:** Integrating with other national and global (EP100) energy/carbon/sustainability commitments
- **Providing ideal type and level of support within tight budget.**
- **Metrics:** Allowing companies flexibility for pilot
- **Base-line:** Allow base-line as early as 2005 – aligned with EP100
- **Monitoring and verification:** Light handed but credible
- **Boundaries for recognition:** Whole corporation/division using 50%+ of energy
- **Engaging CEOs:** Strong value proposition around recognition and savings
- **Food supply chain:** Farm to plate (including ag, freight, supermarket companies).
- **Strong linkages** with State delivery programs.

## EP Scan

- Workshop conducted with management and technical engineering staff to identify major business opportunities.
- 2 elements:
  - Management diagnostic
  - Scan of key productivity improvement opportunities relating to energy use
- EP scan is not a technical energy 'audit'
- Purpose of the EP Scan
  - Assess existing EP practices and priority areas for improvement
  - Identify and evaluate major EP opportunities
  - Identify key steps required to gain approval to implement a keystone project



## 2xEP business infrastructure

- 2xEP Steering Committee – 30 senior members from business, research, associations with government observers
- Working groups – over 100 members from business, researchers, associations meeting 1-2 times/month and contributing over \$100k of time/month
  - Manufacturing
  - Mining
  - Agriculture
  - Passenger transport
  - Freight transport
  - Built environment
  - ✓ Innovation
  - ✓ Financing and investment
  - ✓ Metrics, measurement and reporting
  - ✓ Communications and advocacy



## 2xEP Journey

### **2013: A2SE commitment to 2xEP**

#### **Phase 1 (2013/14): RESEARCH AND AWARENESS**

- Developed theory, methodologies and metrics.
- Sector studies on opportunity and barriers
- Consensus on need and opportunity for 2xEP

#### **Phase 2 (2015/16): BUSINESS ON BOARD, BUILDING CONSENSUS**

- Steering Committee and working groups to build roadmaps.
- Innovation roadmap and work on investment/finance and data/metrics

#### **Phase 3 (Sept 2016-March 2017): SIGN OFF BIPARTISAN 2xEP POLICY/ PROGRAM**

- Integrated national roadmap

#### **Phase 4 (2017-): DELIVERY**

- Sustainable funding and governance model for 2xEP, implementation and evaluation



## 2xEP Innovation Roadmap - Value chains

