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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.
 $\text{\$/value added/GJ}$

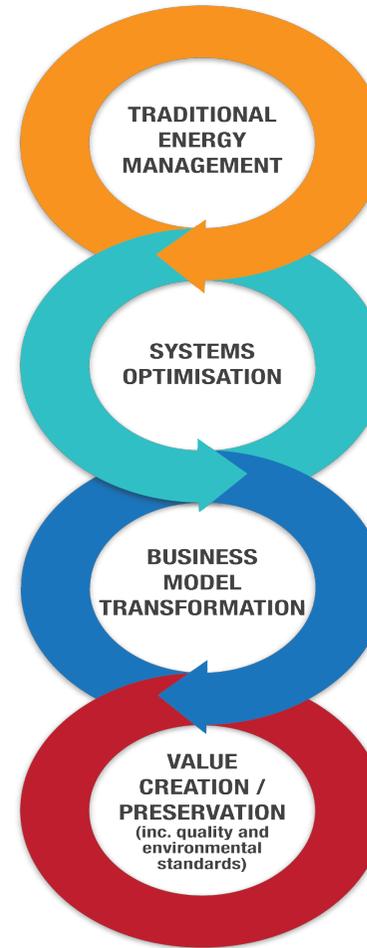
Achieved by increasing value AND decreasing energy to deliver services

- 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

Additive manufacturing/3-D design
Advanced materials
Process intensification

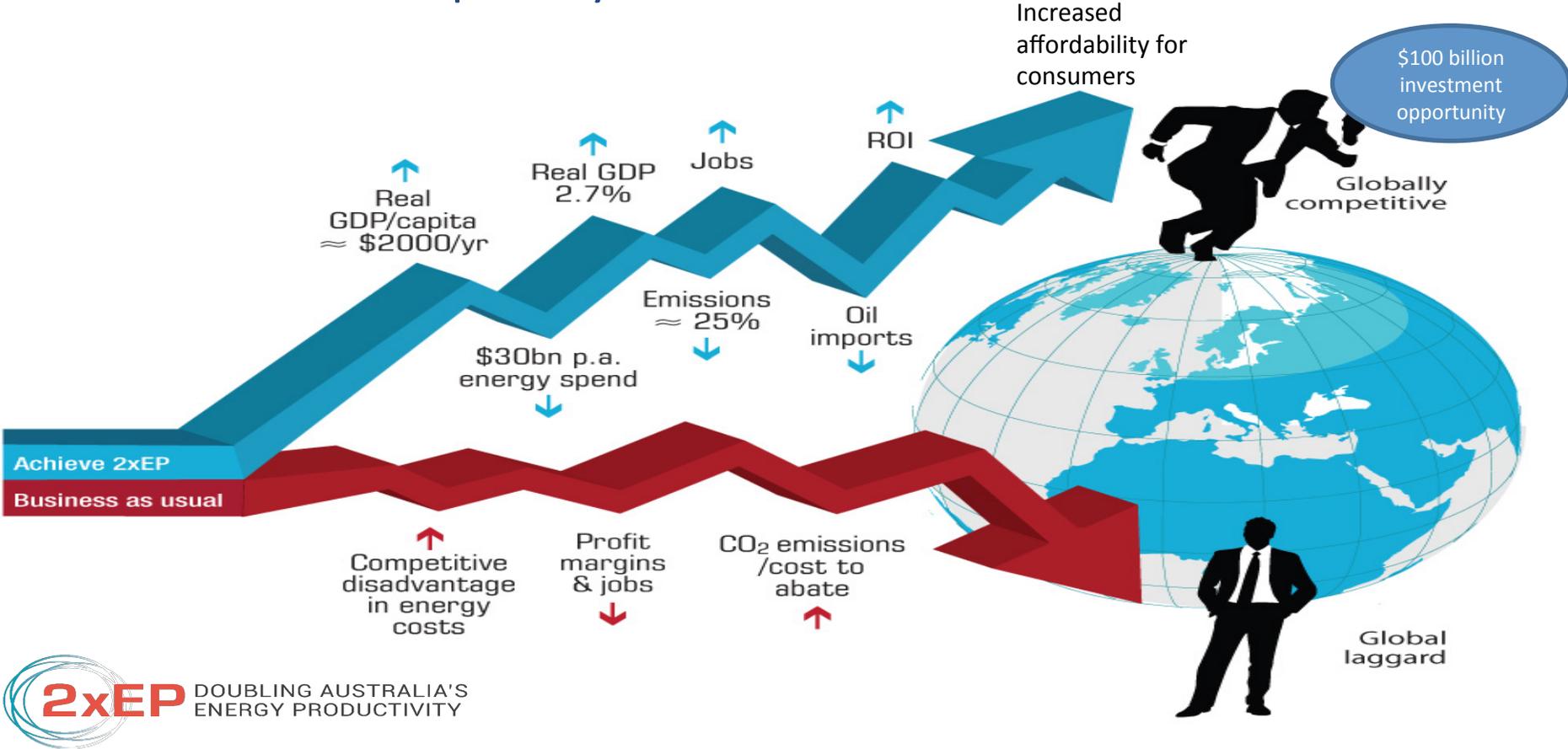
Business model transformation

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

