



EEO Act Assessment Process

**Data analysis & opportunity
identification
Shell Geelong Refinery**

Geelong Refinery

- EEO assessment began in 2006 during refinery Business Improvement Review
- It built on from 2003 and 2001 energy assessments
- Assessment process met:
 - Federal government (EEO Act) requirements
 - State EPA (EREP) requirements
 - Shell (global) Carbon Energy Management requirements
 - Refinery Environment Improvement Plan objectives



Data compilation & analysis

- Refinery energy and mass balances
 - Plant by plant
 - Broken down to fuel type
- Detailed assessments undertaken every 2-3 years
 - EEO and EREP assessment facilitated through 2006 Business Improvement Review & 2008 Carbon Energy Management Plan development
- Monthly energy reporting to site
 - Performance of each plant



Challenges

- Ensuring all State and Federal legislative requirements were met with the one assessment process
- Meeting Shell global carbon/energy management requirements
- Streamlining reporting to meet all end user requirements



Opportunities

- Increased efficiency of waste heat boiler
- Advanced process control on furnaces
- Re-instatement of turbo-alternator
- Site wide steam optimisation



Pathways to a Low-Carbon Economy

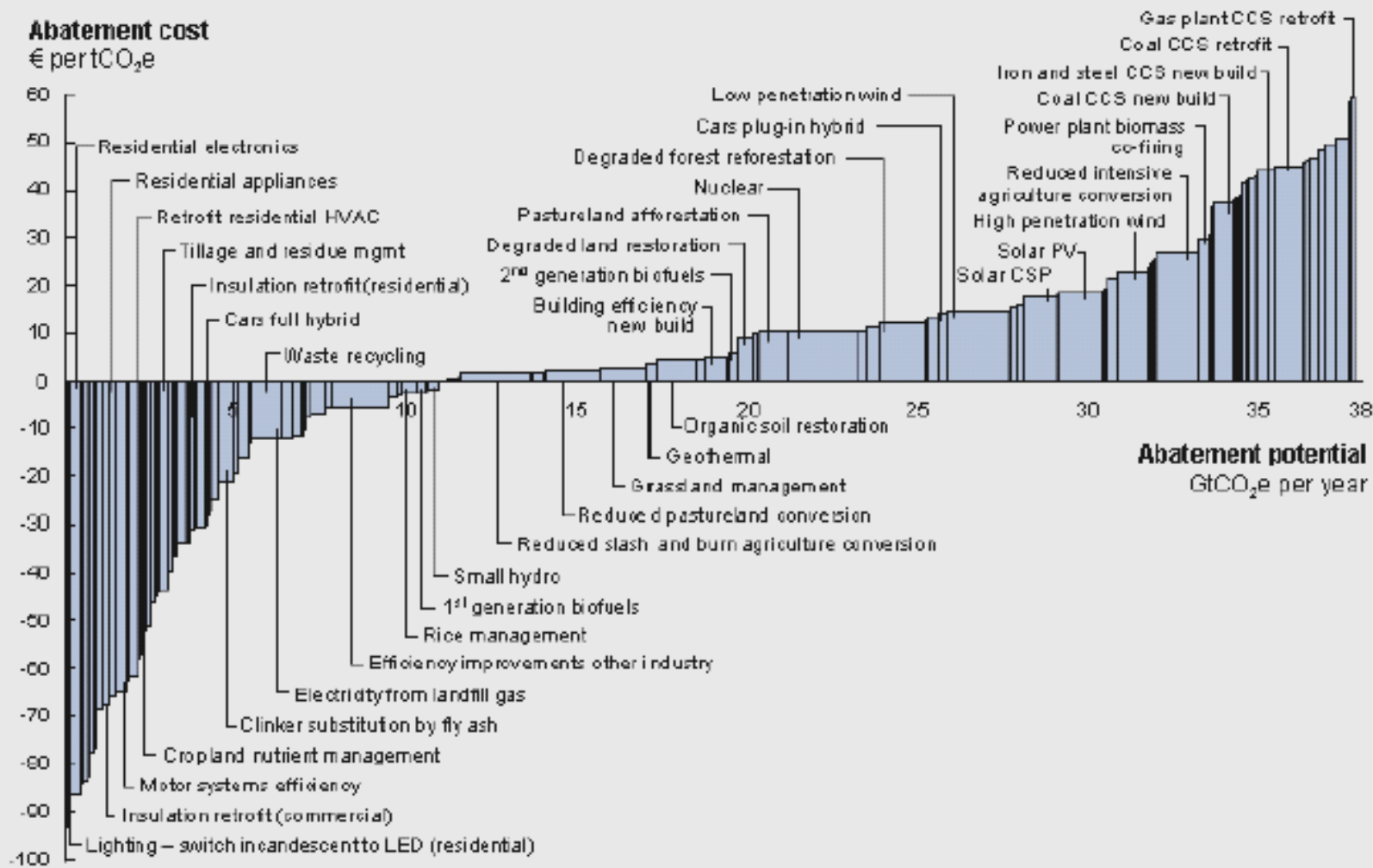
- In 2008, Shell, together with nine other leading organisations sponsored a study independently led by McKinsey, to evaluate the opportunities available to society to reduce CO₂(e) emissions
- Pathways to a low-carbon economy officially released 26 January 2009

http://www.mckinsey.com/client-service/ccsi/pathways_low_carbon_economy.asp



Exhibit 3.0.1

Global GHG abatement cost curve beyond business-as-usual – 2030

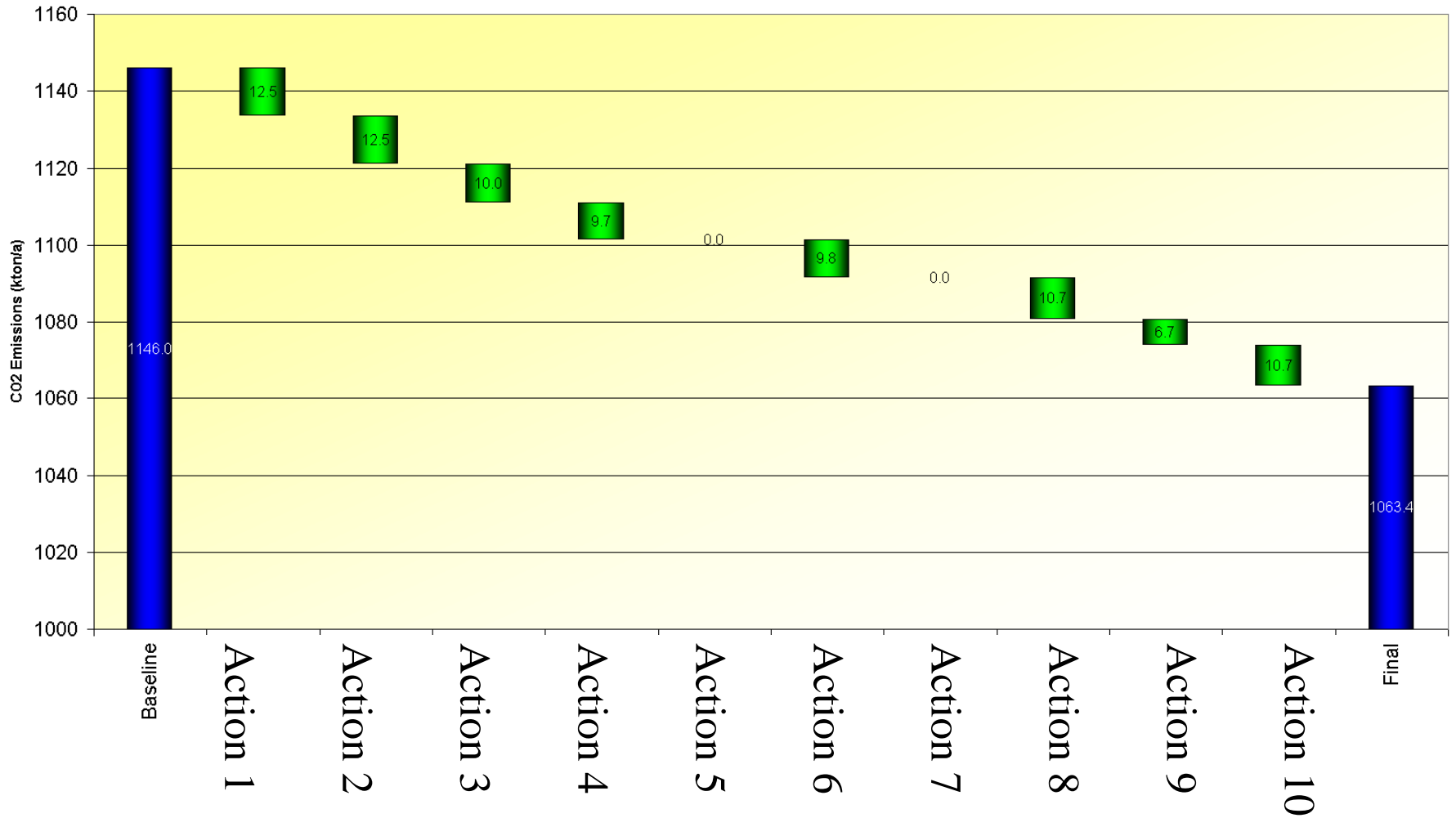


Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below €60 per tCO₂e if each lever was pursued aggressively. It is not a forecast of what role different abatement measures and technologies will play.
Source: Global GHG Abatement Cost Curve v2.0



CO₂ Emissions Change Waterfall

CO₂ Reduction for Geelong



Improving data

- EITE assurance process has provided a framework for data improvements
- Robust baseline data key element of assessment
- Enhancements to Energy Management System
- Records for NGERs/CPRS verification



Implementing new process to 'Business As Usual'

- Continuing energy efficiency improvements
- Develop systems to integrate new reporting requirements into existing processes
- Audit trails for verification exercises
- Future challenges:
 - Adapting to changing legislative requirements
 - Identifying opportunities to make the most of the global energy challenges



Questions?

