

Manufacturing Green?

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One Team.

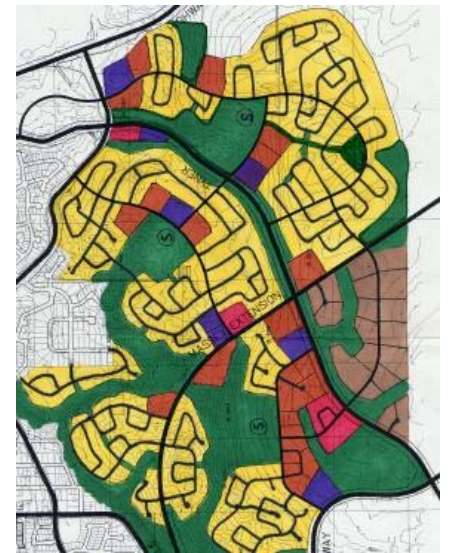
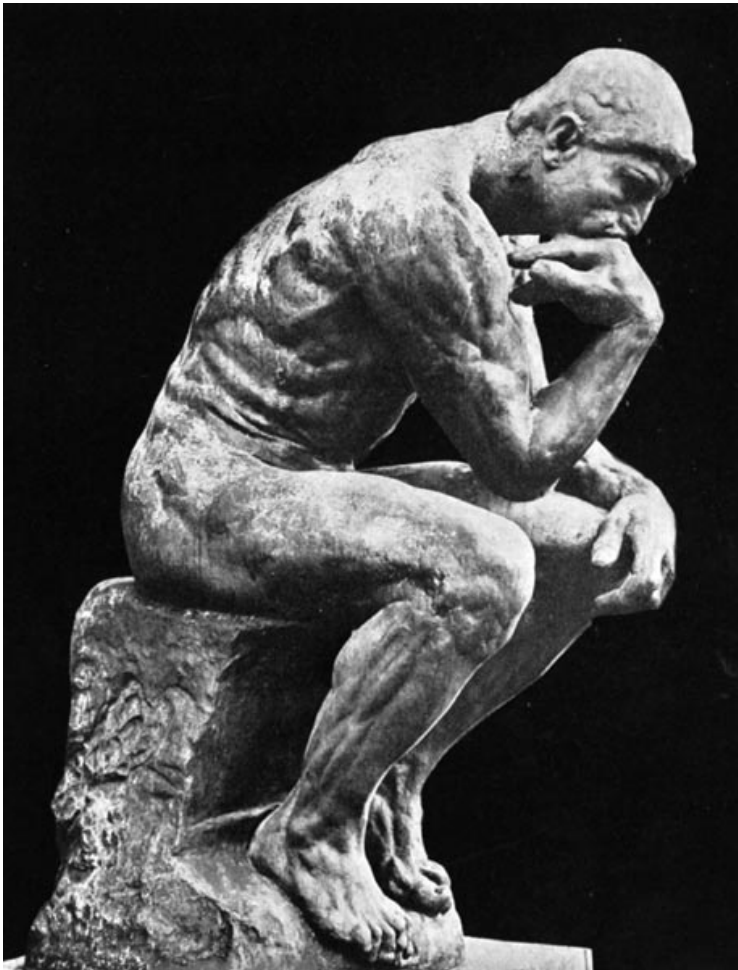
Infinite Solutions.



Stantec

What do you think of...

When you think of a green building?



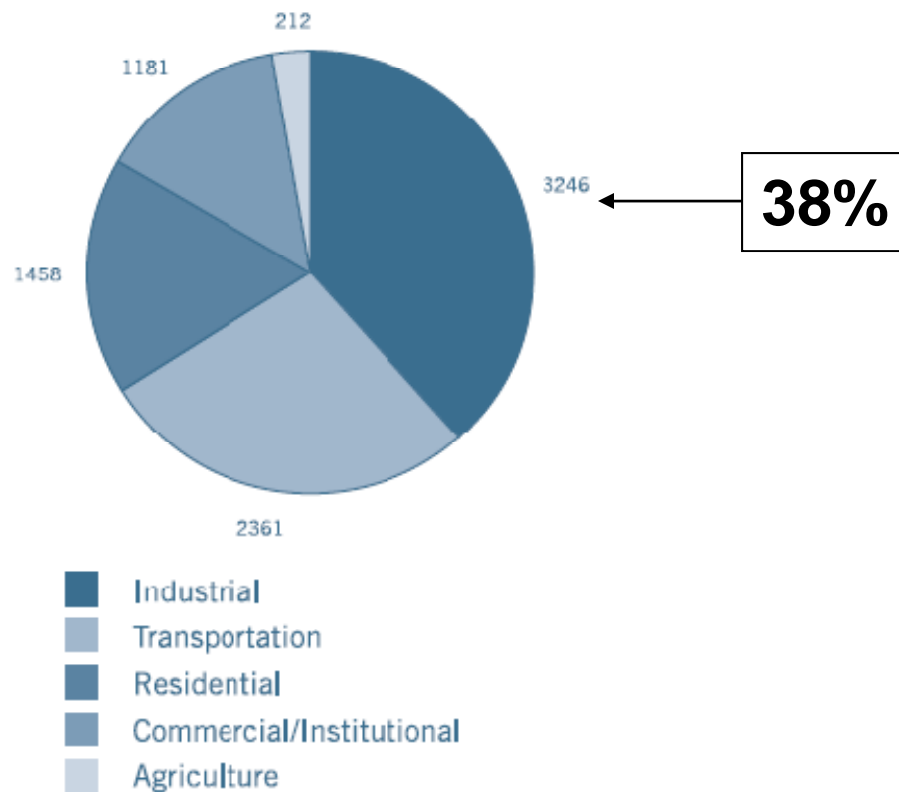
What do you think of...

When you think of industry?



Industry single largest user of energy

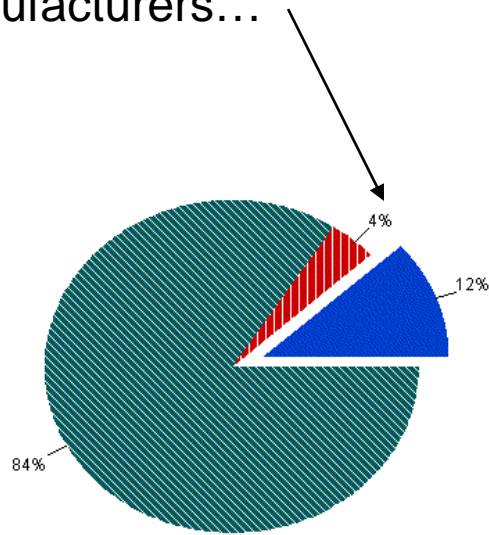
Secondary Energy Use by Sector,
2003 (petajoules)



Source: Natural Resources Canada (2006) *The State of Energy Efficiency in Canada*

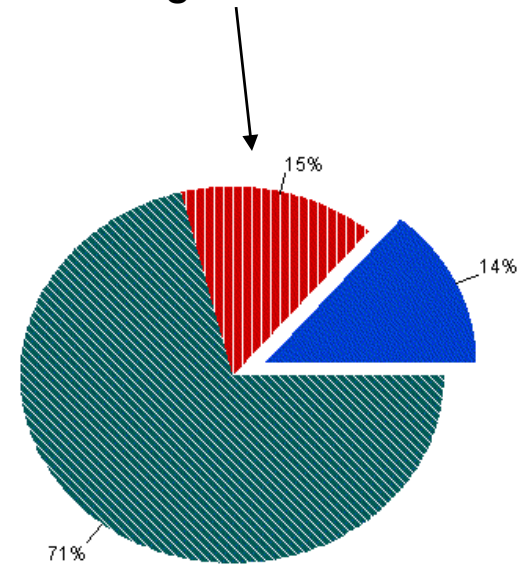
Facts about manufacturing and energy

Energy is a small proportion of operating costs for most manufacturers...



■ Production Wages ■ Energy, Water and Vehicle Fuel
■ Materials and Supplies

But not all...e.g. paper manufacturing



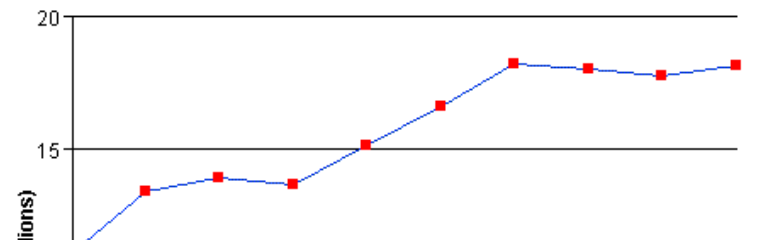
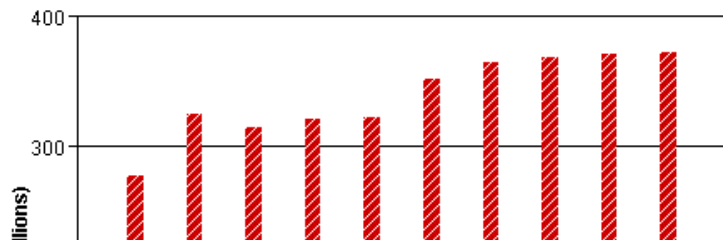
■ Production Wages ■ Energy, Water and Vehicle Fuel
■ Materials and Supplies

Source: Industry Canada (2008) *Canadian Industry Statistics*

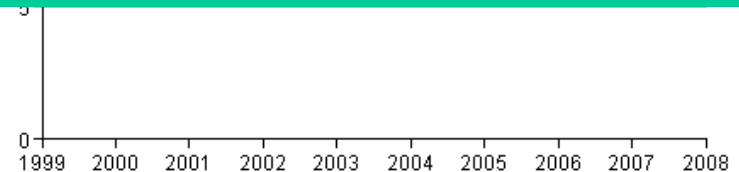
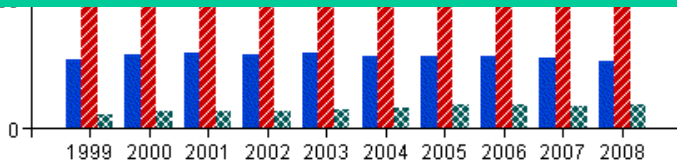
Facts about manufacturing and energy

Material/supply costs are rising...and so is the cost of energy

Over \$18 billion/yr on energy and water in 2008



In a 2008 CME survey, 55% of businesses identified high energy costs as a key strategic challenge



■ Production Wages
 ■ Materials and Supplies
 ■ Energy, Water and Vehicle Fuel

—■— Cost of Energy, Water and Vehicle Fuel

Source: Industry Canada (2008) *Canadian Industry Statistics*

Facts about manufacturing in AB

- 124,000 employees in Alberta
- Worth \$291.7 billion/yr
- Most businesses are small (<100 employees)
 - Agri-foods (92%)
 - Plastics (85%)
 - Metal fabrication and industrial machinery (81%)
- Under pressure
 - Export dependent - exchange rates/strength of the loonie
 - International competition
 - High cost of wages
 - Worker shortages
 - Rising material costs
 - Rising energy costs

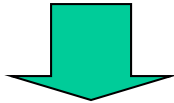
**27% of Alberta Manufacturing SMEs
were non-profitable in 2008***

*Source: Industry Canada (2010) [WWW] *SME Benchmarking Tool Report*

The project

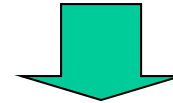
Funded by Alberta Finance & Enterprise (Productivity Alberta) and Alberta Environment

- Phase 1 - Improving Energy Efficiency for Alberta's Industrial and Manufacturing Sectors (IEEIMS) (*with CME and Marbek*)



- Identify potential
 - Identify best practices
 - Benchmark facilities
 - Identify barriers

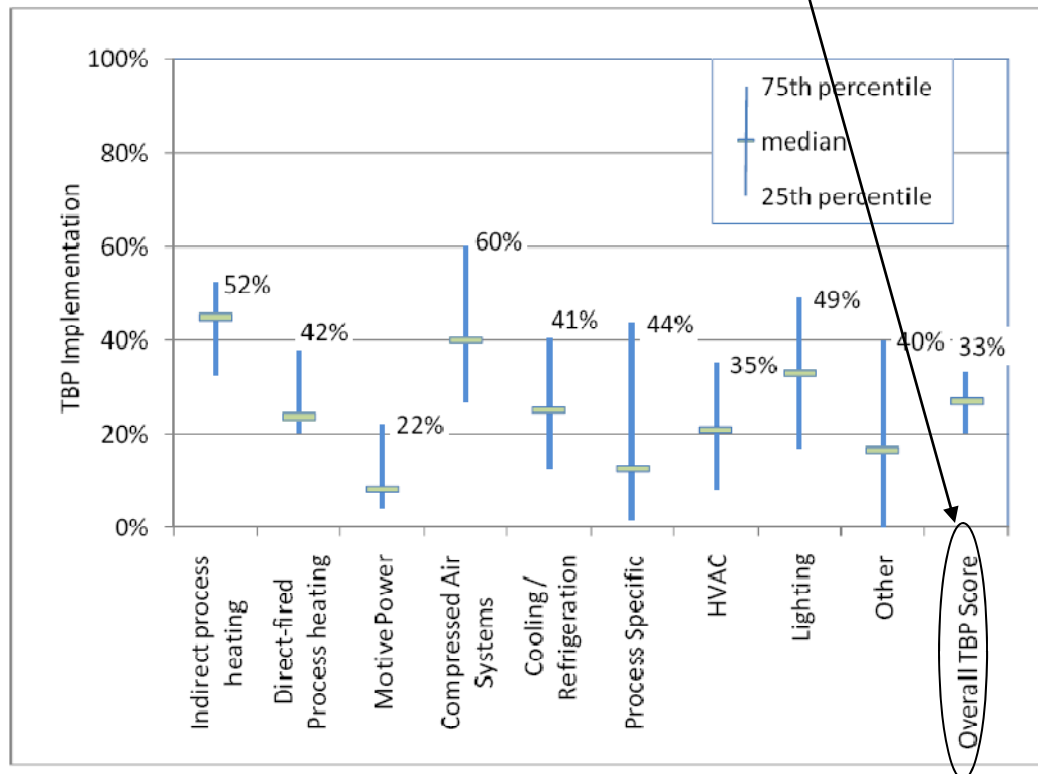
- Phase 2 - Energy Efficiency Assessment Program Development (EEAPD)



- Energy audit incentive development
 - Survey industry needs
 - Survey best practice
 - Design an incentive program

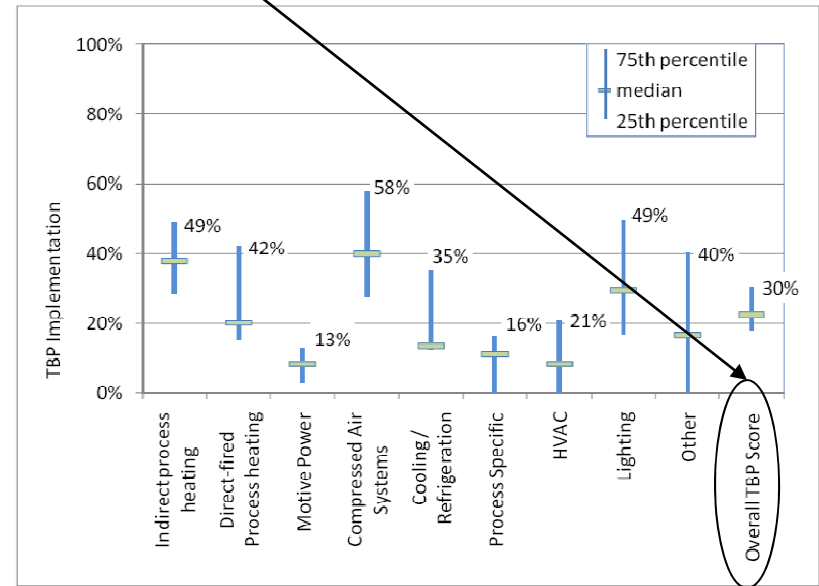
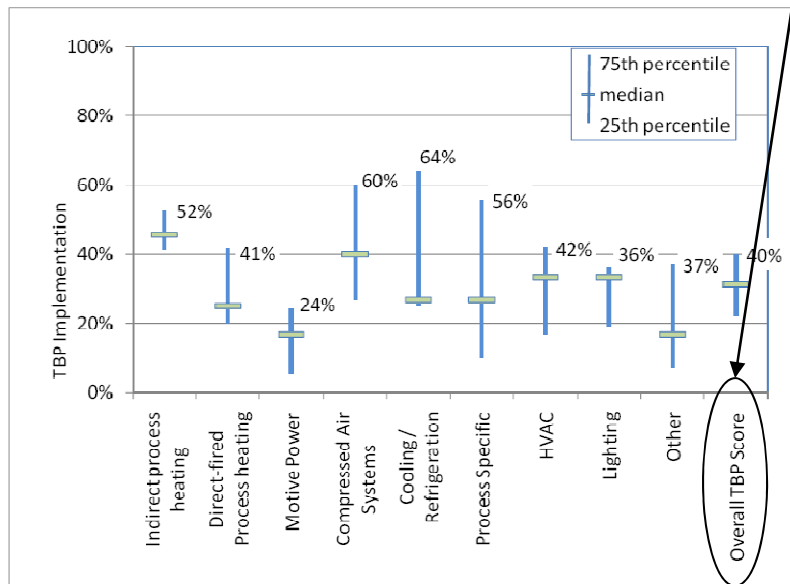
Phase 1 – key findings

- Low implementation of Technical Best Practices
- Median implementation rate of 33%



Phase 1 – key findings

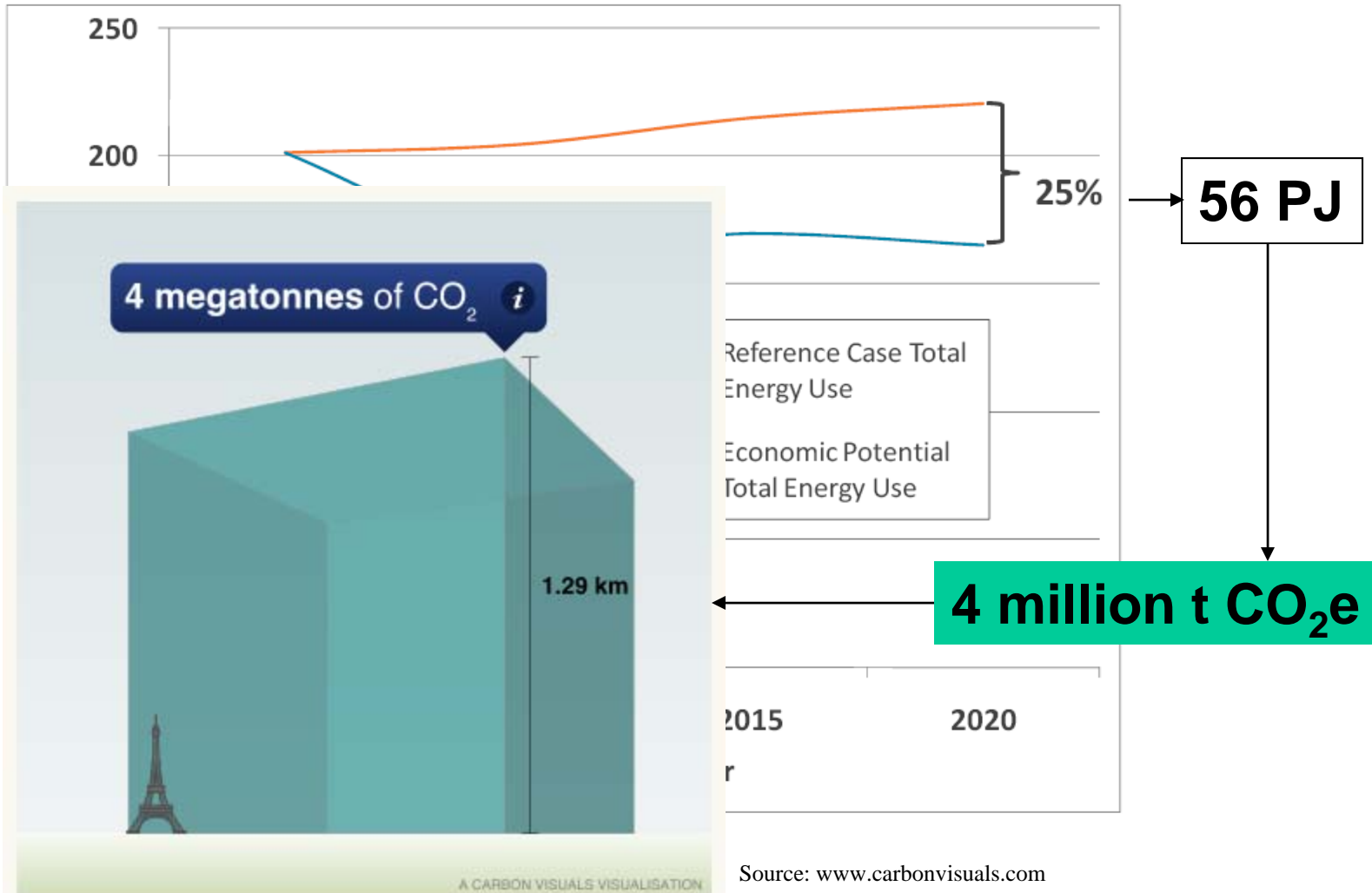
- Better for large plants vs small
- Median implementation rate of 40%...vs 30%



Phase 1 – key findings

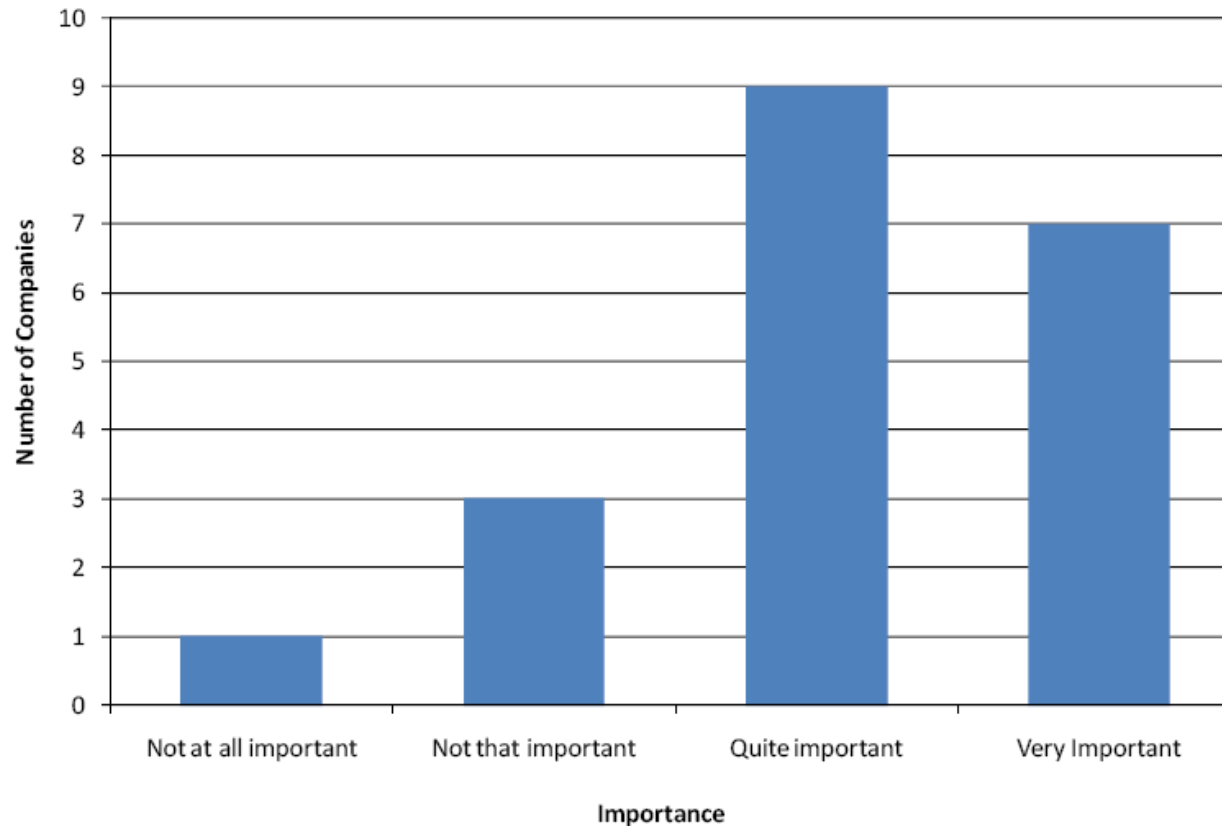
Category	Challenges / Barriers
Financing of EE Projects	Payback period for EE projects are too high, or ROI is too low.
Commitment to Energy Management	The company has a lack of human resources to focus on energy management.
Commitment to Energy Management	Production is the dominant focus, and energy management is not seen as a production element.
Transaction Costs	Too much effort to access assistance, funding and incentives from programs.
Perceived Risk/Reward	Do not know what performance of EE opportunities / products will be when screening opportunities.
Financing of EE Projects	Do not know where to find sources of funding and incentives.
Perceived Risk/Reward	Have the perception that EE products do not perform as well as claimed by supplier / energy service provider.
Financing of EE Projects	Difficult to obtain company financing to implement EE projects.
Knowledge of EE Opportunities	Have limited knowledge of what EE opportunities / products exist.
Transaction Costs	Too much effort to become informed about funding and incentives available from programs.

Phase 1 – key findings



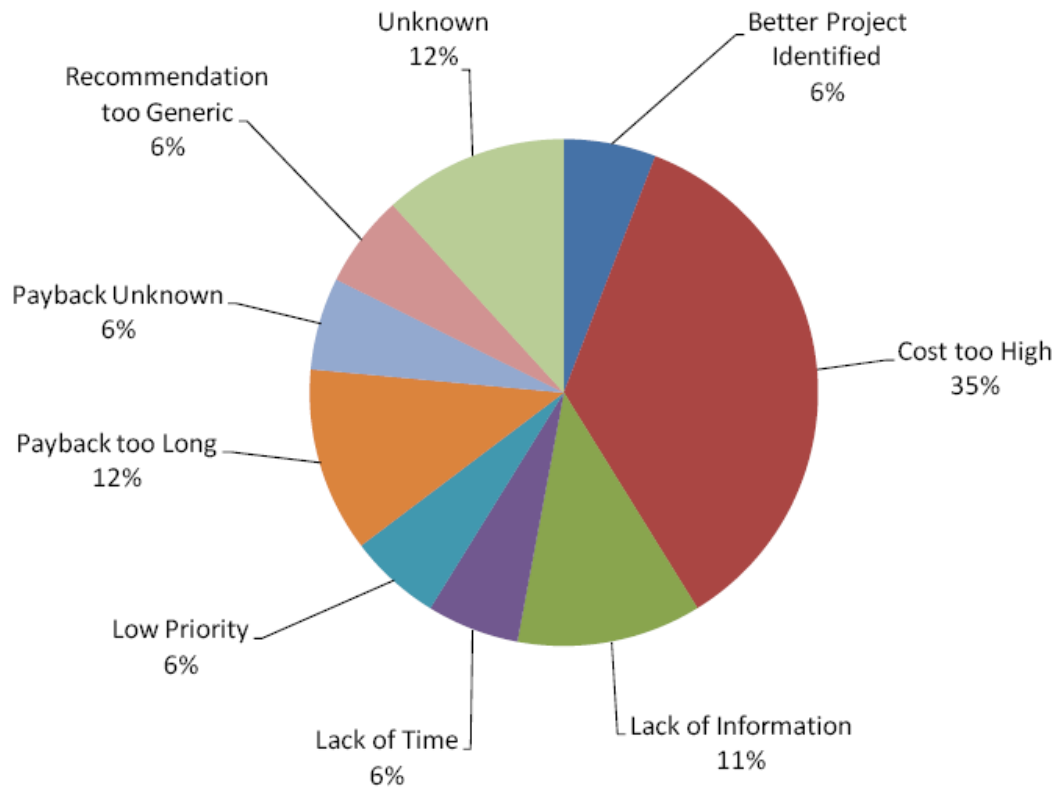
Phase 2 – key findings

- Cost of energy important for 80% of surveyed companies



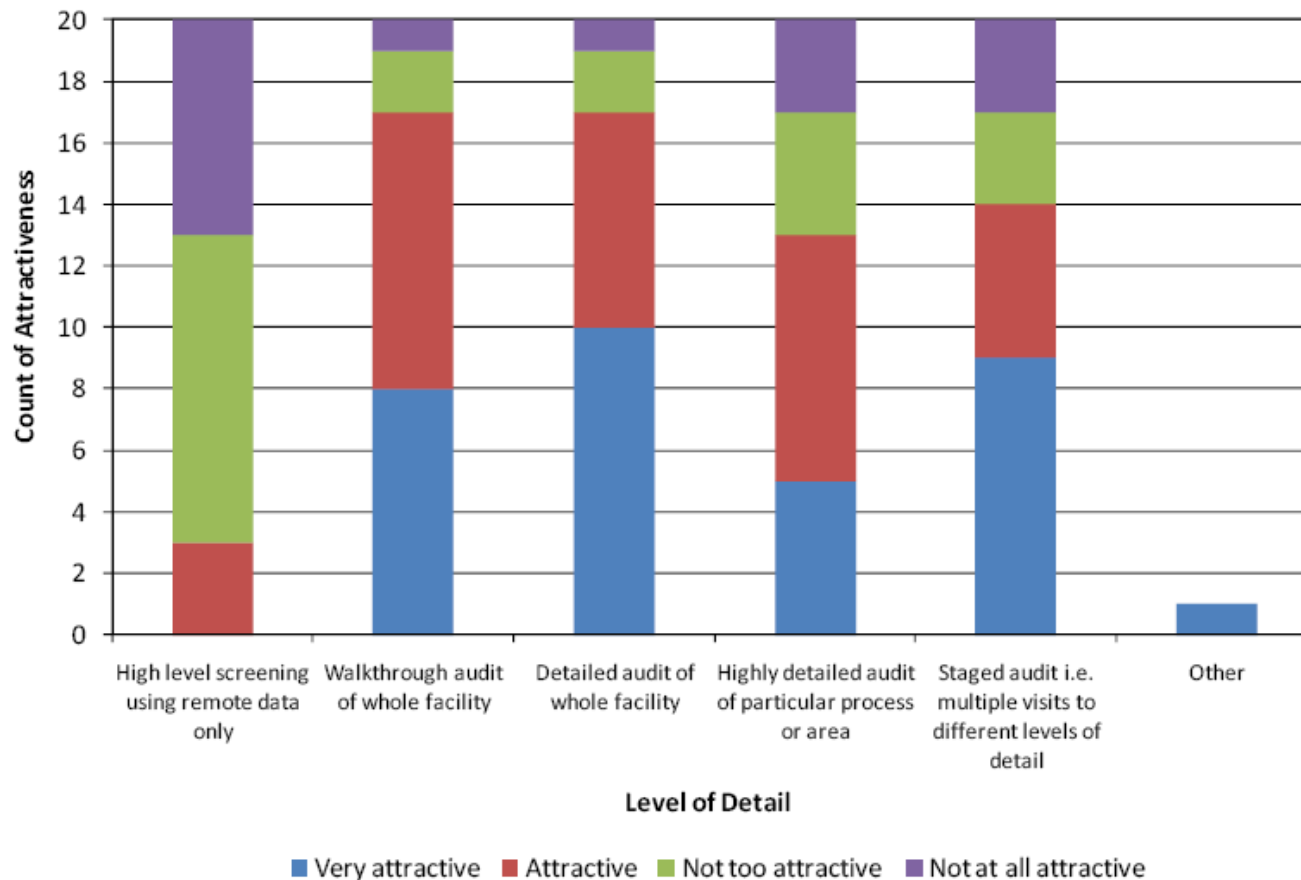
Phase 2 – key findings

- 53% of reasons for non-implementation due to economics



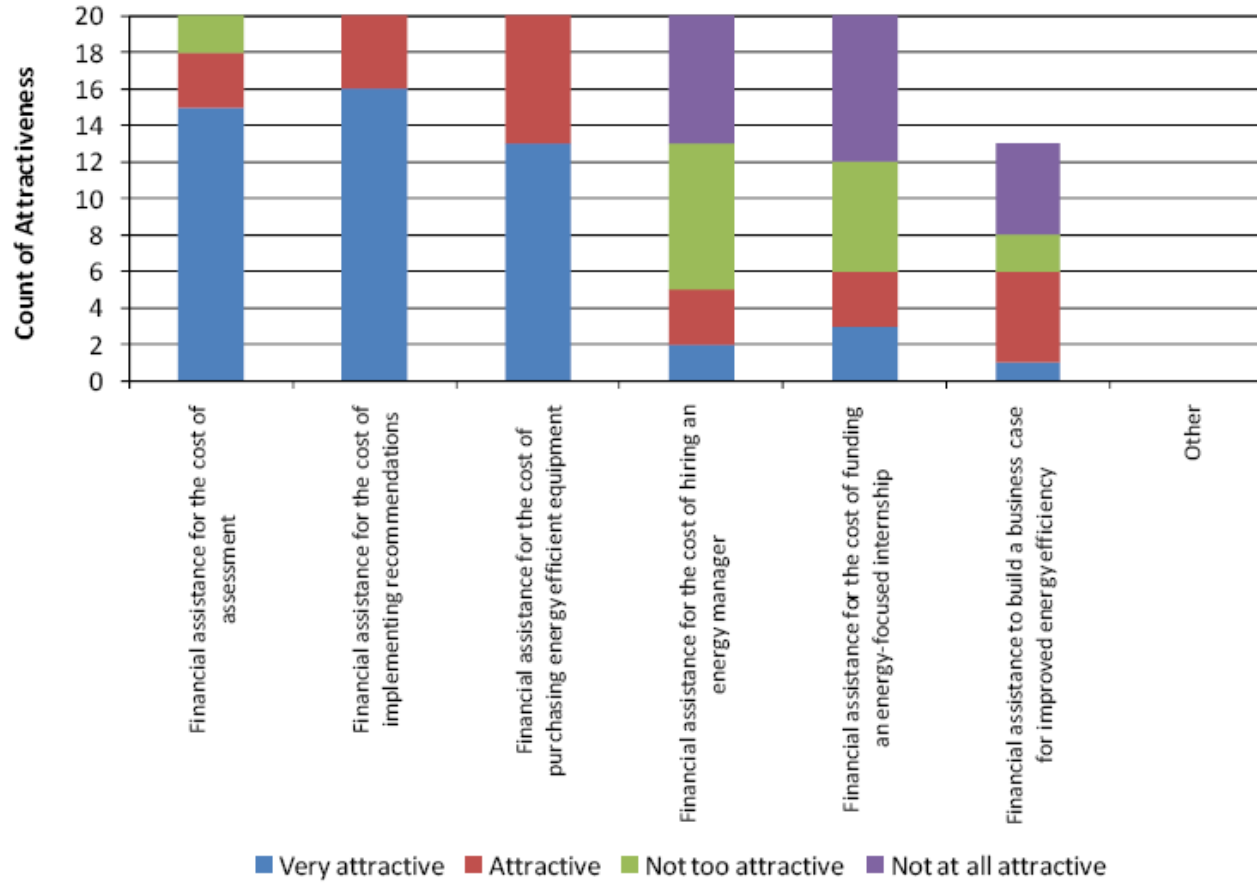
Phase 2 – key findings

- Variety of audit types desirable



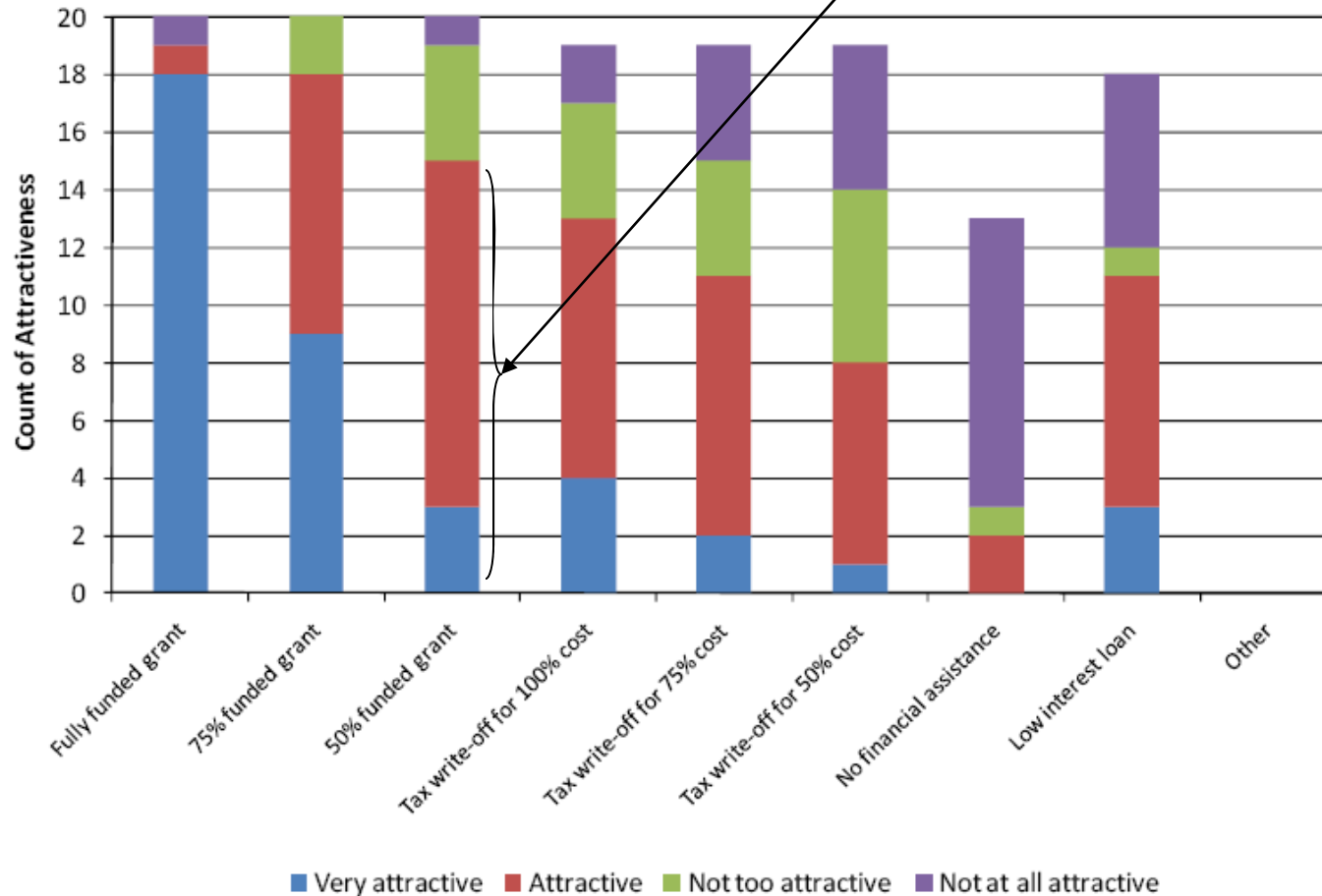
Phase 2 – key findings

- Financial assistance for carrying out audit and implementation



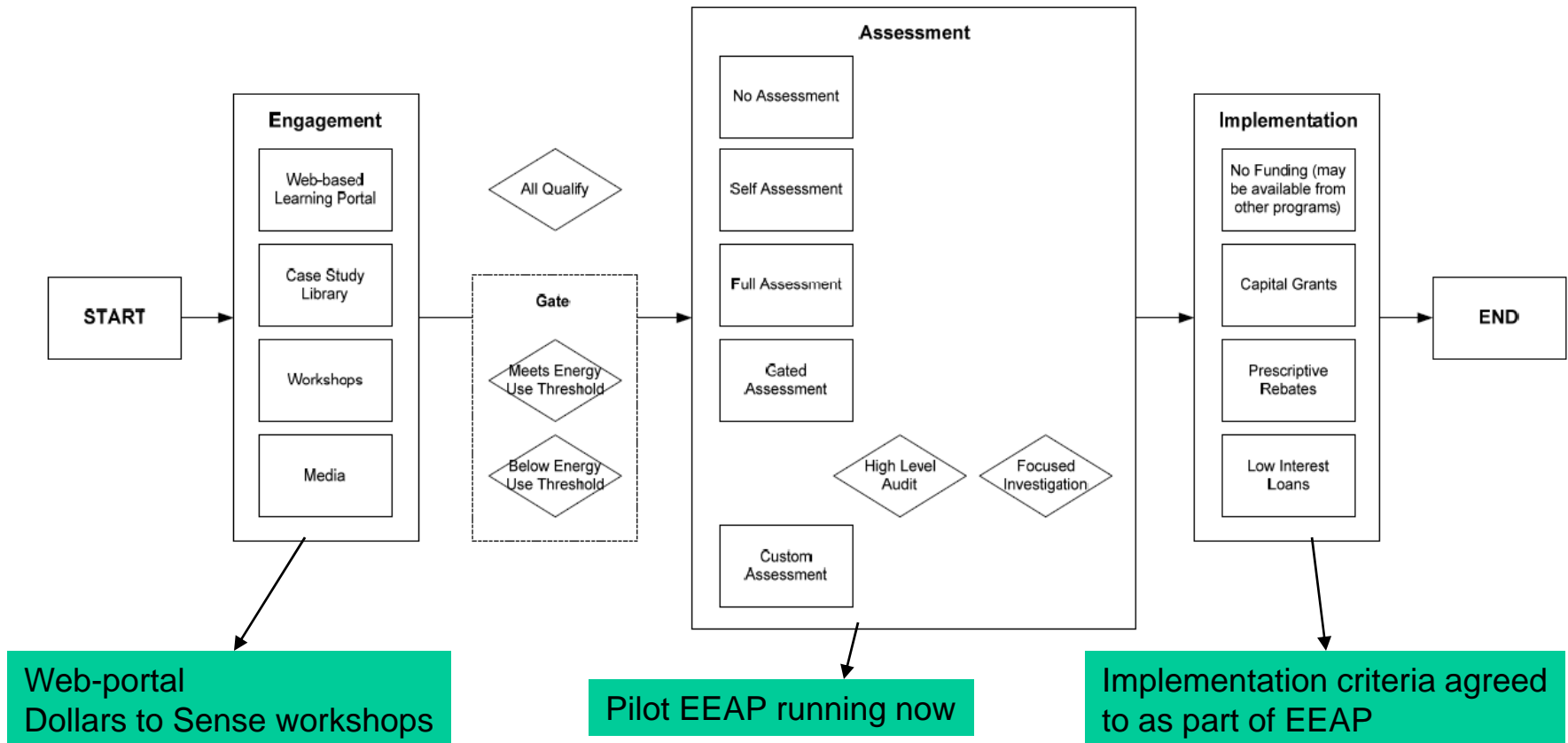
Phase 2 – key findings

- Grant assistance still attractive at 50% cost-sharing



Phase 2 – key findings...and action!

- Carry out as part of 3-stage delivery model
 - Engagement, assessment then implementation



The EEAP pilot program

- Being run by Productivity Alberta
- Open to:
 - AB-based manufacturers
 - <300 employees
 - Annual energy costs \$175k - \$5m
 - Agree to implementation criteria
- Can get Opportunities Assessment or Business Case Study
- 50% cost share
- \$25k cap per company

- Assuming
 - 5% savings
 - Average energy costs of \$550k
 - 50 facilities a year for 5 years
- Savings of \$15 million in energy alone over 5 year life of program



Thank-you!

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One Team.

Infinite Solutions.



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