Capturing the Energy Efficiency Opportunity

Colm Gallagher, Dominic O’Sullivan

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Results

• Machine learning reduces the uncertainty in energy savings

• A broader scope of analysis using larger data sets increases accuracy

• Prescriptive modelling methodology developed

• Advanced practices can be adopted without increasing the costs & labour requirements

• IntelliMaV application developed

Fig. 1: Overview of M&V process & representation of methods developed
**Impacts**

- Populate the knowledge gap
- Minimise the costs of completing M&V
- Accurate performance verification enables the development of targeted EE policy

- Aid the removal of barriers that prevent investment in cost-effective energy efficiency (EE)
  - Risk
  - Cost
  - Uncertainty in energy savings
  - Skills gap in workforce

**Fig. 2: Economic value of changes in energy intensity**

**Fig. 3: Sectoral breakdown of M&V 2.0 tools on the market**

**Fig. 4: Sectoral breakdown of global TFEC**
Policy Insights

- Issues with current policy:
  - Standards need to be raised
  - Lack of focus placed on persistence of savings
  - Challenges faced on individual project level

- Energy Efficiency Directive must embrace M&V 2.0 practices

- Successful EE obligation scheme

- How confident can we be in savings reported in 2020?

- What will change as we progress towards 2030?

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<th>New Energy Savings</th>
<th>Cumulative Energy Savings</th>
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Opportunities

• Data-driven energy modelling using machine learning techniques
• Automated performance verification
• Real-time M&V to maximise the opportunity
• Prescriptive guidance for practitioners to implement
• IntelliMaV: a data science-based cloud computing application for M&V 2.0