



# Sustainable Energy Authority of Ireland

National Energy Research,  
Development & Demonstration  
Funding Programme 2018

## FINAL REPORT TEMPLATE

### SECTION 1: PROJECT DETAILS

Table 1.1 – Summary of Project Details

<b>Project Title</b>	DiSTRaCT: modal Shift Reduce Carbon in Transport
<b>Lead Applicant (Organisation)</b>	Trinity College Dublin
<b>Lead Applicant (Name)</b>	Brian Caulfield
<b>Final Report Prepared By:</b>	Brian Caulfield, Sheila Convery
<b>Total Project Duration (months)</b>	12

<b>Approved SEAI Funding</b>	€91,924
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	<b>Name</b>	<b>Organisation</b>
<b>Partner Applicant(s)</b>		
<b>Collaborators</b>		

#### Project Summary (max 500 words)

There is considerable experience internationally in implementing behaviour change programmes which aim to reduce carbon emissions from the transport sector. These programmes offer huge potential to reduce emissions but without large scale infrastructure investments (considered greater than €20m). Typically, these programmes involve changing peoples' day to day travel behaviour by, for example shifting their use of mode to one with lower emissions (e.g. public transport) or to an active transport mode (e.g. walking or cycling). However, there is also ability to modify peoples' behaviour with respect to how they use their private car. This includes reducing the number of trips by modifying the need to travel and/or using cleaner fuels and/or better maintenance and more efficient use of existing fuel types. The programmes which are focused on behaviour change separately from infrastructure development are considered 'low budget'.

The DISTRACT project reviewed international literature to inform i) the categories of programmes in use; ii) the level of evidence and experience available in implementing these programmes; iii) the key indicators used to evaluate them iv) the relative costs of implementation and v) current

practice in appraisal. A short-listing process was carried out whereby current evidence available on seven criteria Cost, Scalability, Impact, Development time, Risk of failure, Level of Experience/Evidence and Urban/Rural Impact was collated in respect of eleven categories of behaviour change programmes. This led to the selection of four measures which were taken forward for further analysis and development within the project.

The four DISTRACT measures were selected so that they could be developed for implementation in Ireland. These are: EV Infrastructure in Workplaces; Remote Working; Home Shopping and Tyre Pressure Monitoring. A survey was carried out to gather data on current behaviour in these domains using a nationwide panel of Irish residents (N=560). The results were used to tailor how the measures could best be implemented, what the likely costs might be and to develop scenarios to estimate the potential CO<sub>2</sub> emissions and energy consumption reductions which could be achieved through their implementation.

The current context influenced by policy; transport, climate change and land use planning - is described and an examination of potential barriers was carried out. This process has been used to inform a roadmap of how the measures might best be implemented.

Table 1 contains a traffic light system was developed to compare the potential of each of the measures examined.

**Table 1: Evaluation of Potential Pilot Projects – synthesis using traffic light system**

Measure	Public Acceptance	Success in Other Countries	Potential Emissions Savings (tCO <sub>2</sub> e/yr)	Time period of emissions savings	Cost (€ million)	Potential for Success	Long term impact on behaviour
Increased EV Availability in Workplaces	Green	Yellow	218,069*	Per annum once all workers have switched to EV	48.0	Yellow	Green
Remote Working	Green	Yellow	3,930	Per annum once increase in remote work implemented	11.6	Yellow	Green
Home Shopping	Yellow	Yellow	324,978* *	Per annum once all of target switch to carbon neutral mode for weekly grocery trip	4.14	Red	Yellow
Tyre Pressure Monitoring	Yellow	Green	2,495	Per annum once target undertake monthly checking	1.0	Yellow	Yellow

In parallel, a review of existing practice in prioritisation of measures for implementation both internationally and in Ireland was carried out. This led to some recommendations on how the Common Appraisal Framework (DTTAS, 2017) could be modified to provide useful inputs for decision-makers in the process of selection of behaviour change programmes for implementation.

<b>Keywords (min 3 and max 10)</b>	Sustainable Transport Transport Emissions Behaviour Change
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**SECTION 2: EXCELLENCE & INNOVATION**

(max 5 pages)

**2.1 Innovation / Novelty – Beyond State-of-the-Art**

- *Innovation 1: Behavioural Change*
  - *The four sustainable mobility options examined in this project Have not been examined to any great extent in Ireland prior to this research.*
  - *The research also demonstrates how behavioral change can be implemented by pilot projects and how to measure success.*
- *Innovation 2: Emissions Estimation & Evaluation*
  - *The four sustainable mobility options measured the potential emission savings through combining mobility data from our survey with emissions factors to estimate potential emission savings.*
  - *The traffic light evaluation method adopted by the project enables a high level of policy analysis of the options considered.*

**2.2 Project Objectives**

*Table 2.1 – Summary of Project Objectives*

No	Objective Description	Objective completed (Y/N) Justify your answer	Key Outcomes/Deliverables
1.	Examine past literature to determine the success or otherwise of low cost behavioural change projects	Y	WP1 Report – Literature Review
2.	Conduct a review of the suitability of these projects for piloting in the Irish context	Y	WP4 and WP5 Reports
3.	Estimate the potential emissions savings from low cost behavioural change policies	Y	WP2 Report
4.	Determine the economic costs and benefits of these policies	Y	WP3 Report
5.	Conduct a survey to determine the acceptability of the policies identified	Y	WP5 Report, Raw survey data, Analysis of survey results
6.	Produce a list of potential projects to pilot in Ireland ranked based upon possible success factors	Y	WP1 and WP6

## SECTION 3: RELEVANCE & IMPACT

(max 6 pages)

### 3.1 Relevance to the needs of the Irish Energy Sector and to SEAI

Progress towards targets for emissions reductions as adopted in the Paris Agreement, the Climate Mitigation Plan and by the transport sector has been largely unsuccessful in the face of increased travel demand associated with increased economic activity in recent years. A wider and more effective action-based approach is underway. The use of behavioural change programmes is an important part of the suite of tools which are needed. The advantage of using behavioural change programmes is that they are relatively low cost compared with infrastructural measures and that they have the potential to amplify progress in reductions due to their impact on social norms which can amplify initial benefits into wider populations and longer time periods.

### 3.2 Project Impact

Given the duration of the research conducted it is hard at this point to discuss concrete project impacts. However, in the short duration of the project a number of impacts were realised.

The first impacts relate to the emission reduction strategies that were decided upon by the project group and the steering group. to date no research had been done on either of these strategies and the results provide the funders and stakeholders with information on that potential success of these projects.

The results from the project are examined from both an economic and environmental perspective and the evaluation tools used in the project represent a change in how we evaluate small scale transport pilot projects. This evaluation approach should provide policy makers in this area with the blueprint as to how to evaluate such small-scale projects.

### 3.3 Communication, Dissemination and Exploitation

Tables 3.1 and 3.2 detail the dissemination and communication that have taken place to date on this project. While further communication and dissemination is planned on this project, it hasn't happened in the short run due to the travel and meeting restrictions Related to the corona virus pandemic. Any updates on activities in this area will be provided to SEAI.

### 3.4 Intellectual Property Management & Exploitation

This is not applicable in this project.

Table 3.1 – List of Scientific Publications

Title	Main Author	Journal Title	Number, Date or Frequency	Publisher	Year of Publication	Is/Will open access be provided? If you marked “will”, provide an estimate of the date	Peer-reviewed (Y/N)?
Achieving emissions reductions in transport: An assessment of low cost behaviour change programmes for Ireland	Sheila Convery, Brian Caulfield, Margaret O’Mahony	Abstract	<a href="https://aetransport.org/past-etc-papers/search-all-etc-conference-papers?abstractId=6370&amp;state=b">https://aetransport.org/past-etc-papers/search-all-etc-conference-papers?abstractId=6370&amp;state=b</a>	European Transport Conference	2019	Yes	N

Table 3.2 – List of Dissemination Activities

Type of Activity	Main Leader	Title	Date/Period	Location	Type of Audience*	Size of Audience
Conference	Sheila Convery, Brian Caulfield	European Transport Conference	9 – 11 October, 2019	Dublin Castle, Dublin	Scientific Community, Industry, Policymakers	30 for session
Briefing for Joint Oireachtas Committee	Sheila Convery, Brian Caulfield	Joint Oireachtas Committee	November, 2019	Department of Transport, Tourism and Sport	Policy makers, Decision makers	unknown

\*Scientific Community (higher education, Research), Industry, Civil Society, Policy makers, Medias, Other ('multiple choices' is possible).