

# Clever & Project Concept Objectives

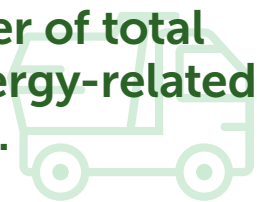
MAR  
2024

# CLEVER Background

**CLEVER:** CREATING LEGITIMATE EMISSION FACTORS FOR VERIFIED GHG EMISSION REDUCTIONS IN TRANSPORT



**GHG emissions from transport comprise around a quarter of total man-made, energy-related GHG emissions.**



Demand for transport services is increasing, meaning that transport GHG emissions are projected to increase in absolute terms and even more so as a proportion of the total as other sectors of the economy begin to address and reduce their emissions. Therefore, gaining an accurate picture of GHG emissions from transport activity is a clear priority if we are to meet the GHG emission reduction targets set out in the Paris Climate agreement.



**The focus on quantification of GHGs** from transport over the past decade has largely been on the development and implementation of a common, global calculation and reporting methodology, with considerable recent success. However, to make best use of this step change methodology for calculation, reporting and, most importantly, emission reduction in the transport sector it is crucial to use the best possible input data. This relies on the use of the best possible emission factors as part of the calculation.



**Emission factors** are the values that quantify the amount of GHGs emitted to the atmosphere for a given amount of energy consumed and a key input at the heart of any calculation of GHG emissions.



However, **emission factors have suffered from a lack of coordinated focus** over the past few years. Whilst there has been a proliferation of work on development of potential new low carbon energy pathways, and an increase in the understanding of the fossil fuel production and distribution chain<sup>2</sup>, work on developing emission factors has proceeded in an uncoordinated way for different transport modes and across different geographies. This has, in turn, resulted in a proliferation of misaligned values. The result is confusion for the end user and potential paralysis in decision making or, even worse, decision making using emission factor sources/values based purely on the basis of what is beneficial to the individual entity rather than what is correct.

Furthermore, it is well-understood that GHG emission calculations need to be made on as complete a basis as possible to avoid transfer of emissions between different sectors of the economy without an overall reduction. This is particularly important when considering novel low carbon energy pathways because the emissions occur within a very different production and use lifecycle compared to the conventional, fossil fuels they replace.

Despite this, the established approach to take into account the emissions from full energy life-cycle and to account for all GHGs from the full production and distribution lifecycle in terms of their CO<sub>2</sub> equivalents is only now gaining traction of some parts of the transport sector.

## ACTIVITIES WITHIN Clever

The work that has already been done on emission factor development around the world and in the different modes does provide a rich, if varied, starting point towards a **unified approach to production of GHG emission factors for the transport sector**.



The aim of the project is, therefore, not to start from scratch but to **bring together the existing knowledge and refine it through a collaborative process**.

Therefore it is crucial that the CLEVER project brings together, in addition to the formal project partners, other participants from a wide range of related stakeholder groups with an interest in ensuring that the emission factors used for transport GHG calculations are comprehensive, accurate, consistent and based on the latest climate science as it relates to the full lifecycle of each transport energy carrier, whether conventional or novel.

This group of experts drawn from the **full ecosystem of producers of feedstocks** used for fuel production, fuel producers, distributors, transport service providers and their customers, policy makers and NGOs who often determine the specification of GHG emission reports, and those who develop and certify the emission factors that cover the needs of all these groups, will all be crucial to the success of the project.



The participating experts will be asked, on a purely voluntary and flexible basis, to get involved in a range of surveys and discussion forums on selected topics related to the work of the CLEVER project and to provide feedback on the project outputs as they become available.



**This is intended to provide the best possible chance of reaching a wide-ranging consensus on this important topic.**

## THE FULL RANGE OF ACTIVITIES PROPOSED TO BE ADDRESSED IN CLEVER ADDRESSES A TASK WITHIN THE EUROPEAN COMMISSION WORK PROGRAM THAT CAN BE SUMMARIZED AS:



**Bringing together the key stakeholders** from the ecosystem to form an Expert Forum.



**Identifying the current range and state-of-the-art** of approaches to emission factor calculation methodologies and using this to identify areas of good/common practice, areas of uncertainty and gaps which need to be filled along with potential pre-existing solutions.



**Using existing sources**, wherever possible, to agree upon a common set of rules on which emission factors should be based, covering, for example:

1

### METHODOLOGY

To ensure that the basis of and legitimate use of the two fundamental methodology types (consequential and attributional) are properly understood and applied appropriately

2

### BOUNDARIES OF CALCULATION

To ensure that boundaries are not accidentally or deliberately set in order to favour particular outcomes

3

### COMMON SETS OF FUEL / ENERGY SPECIFICATIONS

To ensure that data labels and associated values are truly aligned between sources

4

### ASSUMPTIONS ABOUT INPUT PARAMETERS

That can result in variations in output values based on local circumstances for specific production are fully specified

5

### THE BASIS FOR CALCULATING EMISSION FACTORS

For new energy carriers to be calculated quickly and reliably to avoid delaying the deployment of new, beneficial solutions. .



**Agreeing a common set of rules** on how they should be published and made for use in GHG calculations.



**An overall guidance document** that explains the project's outputs in an accessible format, backed up by a formal database consisting of a first set of emission factor ranges and default values that follows the aforementioned rules, which is anticipated to form the basis of an emission factor database to be incorporated within the implementation of the CountEmissions EU Directive.



**Taking steps to engage with a wider audience** about this work to establish greater awareness and clarity in the marketplace through dissemination, use-case-based testing and a range of training activities.



**Taking steps to initiate a formal standardization process** to support this work.

Given that **emission factors are applied at international level in a global transportation market** efforts are already being made to ensure that globally relevant bodies such as IMO, ICAO and the Argonne National Laboratory are involved alongside prominent European stakeholders.