

Emissions Reduction Potential Grantee Instructional Guide

(Instructions that adhere to the ERP Assessment Tab in the Excel Metrics Collection Template)

1. INTRODUCTION

As an invoicing requirement, we ask our grantees to estimate their **FUTURE EMISSIONS REDUCTIONS POTENTIAL (ERP)** in either **Metric Tons of Carbon Dioxide Equivalent (MTCO₂-e)** or **Million Metric Tons of Carbon Dioxide Equivalent (MMTCO₂-e)**. This future projection is called an **Emissions Reduction Potential (ERP) assessment**. The ERP is the magnitude of Greenhouse Gas emissions to be avoided in the future as a result of deploying the new technology in an incumbent market (the comparable technology, service, product, device or process that a proposed climate solution aims to replace in the market, [Crane Tool Wiki](#)).

We understand there are different ways to conduct these types of emissions calculations. However, this particular calculation is important for MassCEC reporting and metric purposes. Further, we ask our successful grantee companies for this type of assessment because we recognize that most companies are at an early stage with no/few commercial sales or emissions savings to report.

To conduct this assessment, we first ask that you determine if you can use Crane Emissions Reduction Potential ERP assessment tool for your ERP assessment. If not, then a separate set of instructions and suggested calculators are provided.

Regardless of the calculation, we ask that estimates are calculated through the current year to 2050 (Massachusetts net zero goal) and that results are provided in MTCO₂-e (Metric tons of Carbon Dioxide Equivalent) or MMT CO₂-e (Million metric tons of Carbon Dioxide Equivalent) reduced per year. The Crane Tool Assessment automatically provides results in MMTCO₂-e while for other calculations you will be responsible to convert your results to this unit of measure. We provide simplified instructions for this conversion in STEP 3 below.

Please follow the instructions below that accompany the **ERP assessment tab** in your Excel metrics collection template. It is required to complete the **ERP assessment tab** in your metrics collection template with the requested information.

2. ERP ASSESSMENT INSTRUCTIONS

STEP 1 (REQUIRED) – CRANE TOOL DETERMINATION

1.1 Please first determine if you can use the CRANE Emissions Reduction Assessment (ERP) Tool to conduct your ERP assessment by determining if your Technology Solution and Incumbent market can be found in the [Crane-Tool-Incumbent-Markets Excel spreadsheet](#).

1.2 If you find your Technology solution in the Crane Tool Incumbent Markets spreadsheet, please follow the instructions for **STEP 2 – CRANE TOOL INSTRUCTIONS** below and enter the required information under **STEP 2** in the Excel metrics collection template. If you cannot use the Crane Tool, please refer to the instructions for **STEP 3 – OTHER ERP CALCULATION INSTRUCTIONS** beginning on **PAGE 3** and enter the required information under **STEP 3** in the Excel metrics collection template.

STEP 2 – CRANE TOOL INSTRUCTIONS (REQUIRED IF TECHNOLOGY WAS FOUND IN THE CRANE TOOL INCUMBENT MARKETS EXCEL SPREADSHEET)

2.1 GENERAL INFORMATION

INSTRUCTIONS FOR THIS SECTION REFER TO **STEP 2** IN THE METRICS COLLECTION TEMPLATE (LINES 1-28).

Please use the two websites in **Section 2.2** to conduct the Crane Tool assessment and adhere to the requirements in the metrics collection template. Make sure to follow the checklist and answer all the questions in the metrics collection template.

Please conduct the **Crane Tool “Technology Assessment” (potential impact)**. The technology assessment measures the potential impact of a solution- a change in GHG emissions that an innovation may cause compared to an incumbent and based on a standard growth trajectory that assumes the innovation takes over the Serviceable Obtainable Market (SOM), [Crane Tool Wiki](#).

The technology assessment should be conducted **from the current year to 2050 (Massachusetts Net Zero Emissions goal)**. You do not need any of your own data; all data is available in the Crane Tool.

The Assessment is conducted in NINE steps and should take no longer than 30 minutes to complete.

An **OPTIONAL "Company Projection" (planned impact)** may also be conducted. A company projection is the change in GHG emissions that a specific innovation both intends and expects to cause compared to an incumbent and based on realistic analysis of its business model, [Crane Tool Wiki](#)) may be carried out for a 5-10 year projection. If conducting this assessment, the checklist in the metrics collection template and below instructions will not apply. Please see the MassCEC created [Crane Tool User Guide](#) for information to provide results for this type of assessment.

2.2 WEBSITE LINKS TO USE FOR THE CRANE TOOL ERP ASSESSMENT

1. **CRANE TOOL ASSESSMENT LINK**

TO CONDUCT THE CRANE TOOL ASSESSMENT; MAKE AN ACCOUNT, LOG IN, AND CONDUCT YOUR ASSESSMENT.

2. **CRANE TOOL WIKI QUICK START USER GUIDE**

THE STEPS IN THE THIS ONLINE USER GUIDE ADHERE TO THE CRANE TOOL CHECKLIST IN THE METRICS COLLECTION TEMPLATE.

STEP 3 – OTHER ERP CALCULATION INSTRUCTIONS (IF CRANE TOOL CANNOT BE USED)

3.1. GENERAL INFORMATION

REFERS TO **STEP 3** IN THE METRICS COLLECTION TEMPLATE (LINES 29-61).

Please answer all the questions and report your results in MTCO₂-e (Metric tons of Carbon Dioxide Equivalent) or MMT CO₂-e (Million metric tons of Carbon Dioxide Equivalent).

Please remember we are interested in the annual impact of the technology in the current year and the cumulative emissions impact of the technology out to 2050 (Massachusetts net zero goal).

3.2 EXCEL METRIC COLLECTION TEMPLATE INSTRUCTIONS

Please use credible data sources or calculators to measure the emissions reductions potential (ERP) of your technology and answer **QUESTIONS IN STEP 3 OF THE METRICS COLLECTION TEMPLATE** about your technology solution.

3.3 SUGGESTED CREDIBLE DATA SOURCES AND CALCULATORS TO CONDUCT YOUR ERP ASSESSMENT

1. Clean Energy Venture's Simple Emissions Reduction Calculator (SERC) – SUGGESTED (Similar to a Crane Tool Assessment)!
2. KOI (Growing energy and environmental database for early-stage companies to measure climate impact) - ALSO SUGGESTED!
3. United States Department of Energy's Energy Information Administration
4. U.S. Environmental Protection Agency's National Emissions Inventory (especially for greenhouse gases other than carbon dioxide)
5. EPA's Greenhouse Gases Equivalencies Calculator
6. EPA's Avoided Emissions and Generation Tool (AVERT)
7. EPA's WARM tool (for Waste Management Technologies)

3.4 UNIT OF MEASUREMENT

For answer **#4 (STEP 3)** in the metrics collection template, please provide your results in either MTCO₂-e or MMTCO₂-e and specify which measure you chose. The easiest way to do this is to use the SERC tool and then convert the results (in gigatons, GT) into MTCO₂-e using this calculator: <https://www.convertunits.com/from/gigaton/to/metric+ton>.

For reference:

1 Gigaton (GT) = 1,000,000,000 MTCO₂-e

1,000,000 MTCO₂-e = 1.000000 MMTCO₂-e