Carbon Emissions Reduction Account (CERA) Fuel Conversion Reporting Tool

Washington State Joint Transportation Committee

Seth Hartley, Kim Latham, Kat Regnier
ICF

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Agenda

- Team Introduction
- Project Overview
- Tool and Report Overview
- Tool Demonstration
- Next Steps
- Q&A

Introduction & Roles – ICF

Seth Hartley
Project Manager

Kat Regnier
Management and Organization

Kim Latham
User Experience

Joey Bruckner
Tool Development

Joint Transportation Committee

Project Officer
Jeff Ang-Olson

Project Manager
Seth Hartley
Project Coordinator
Kat Regnier

Transportation Experts

Sam Pournazeri
Lou Browning
Fang Yan

Tool Development

Kim Latham
Joey Bruckner
Eric Stipe
Jesse Satterfield

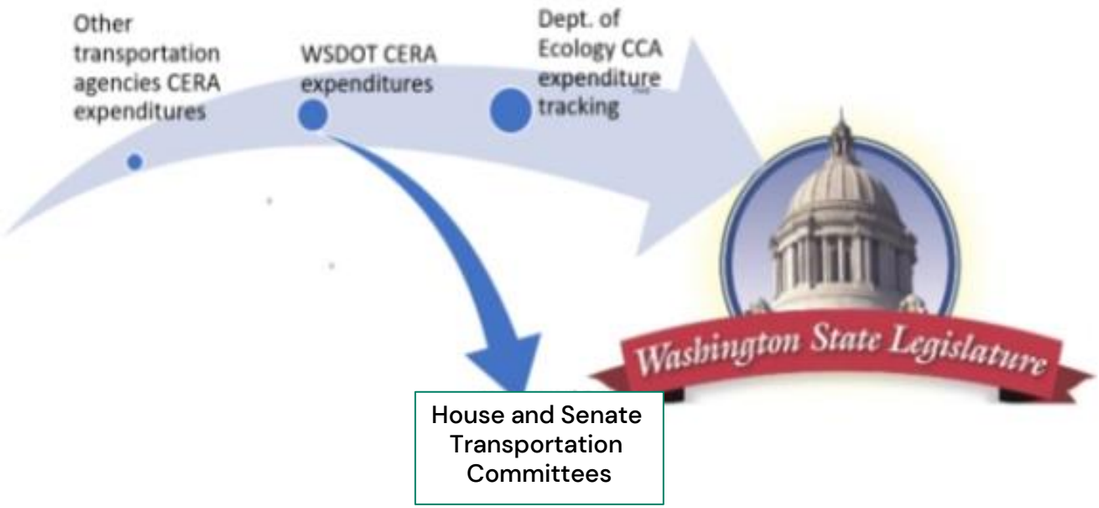
Research, Design, Testing, and Support

Duncan Crowley
Noah Levine
Hong Yang
Farinoush Sharifi

Jacqueline Artiaga
Ramon Molina-Garcia
Claire Lanthier

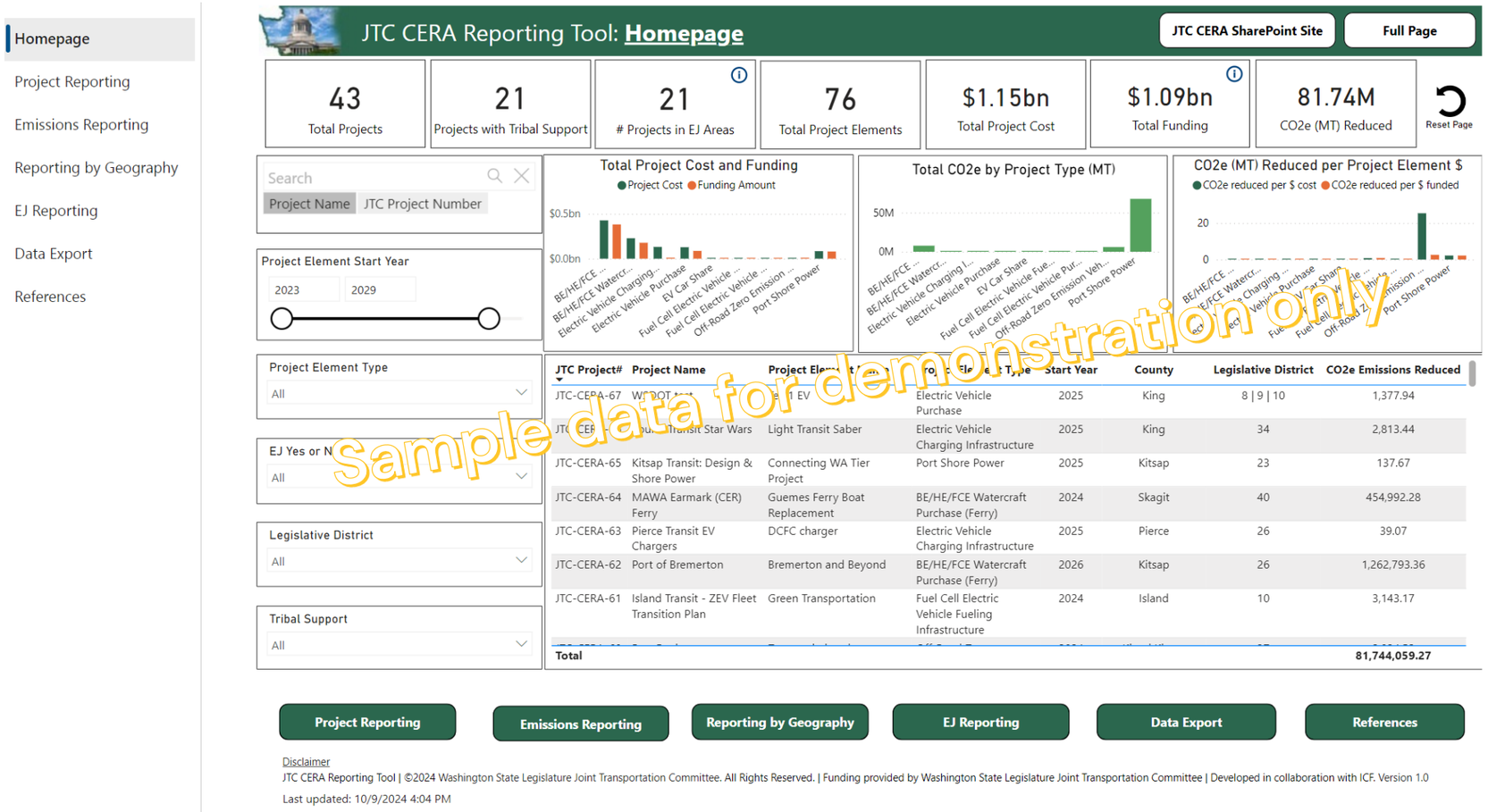
Project Purpose

- Develop a reporting tool to track CERA-funded fuel conversion projects' projected GHG emission reductions and other benefits.
  - Provide JTC with tracking of anticipated benefits of investments
- Support tracking and reporting for 3 categories, consistent with the CERA Proviso:
  1. Costs and funding
     - Funding amount and time (year), tons of GHG reduced per dollar spent, responsible agency, project location
  2. Emission benefits
     - Tons of CO_2e avoided per time
  3. Environmental Justice (EJ)
     - Benefit to vulnerable populations and overburdened communities
     - Tribal support
- Support recommendations for program delivery, future funding, and program improvements

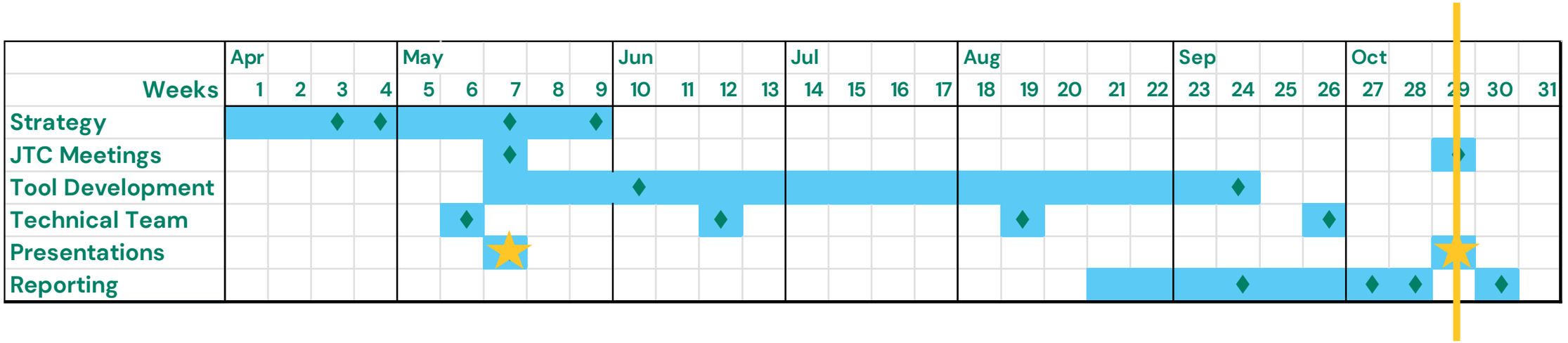


Project Overview

Phase I of this project **designed and built** a Reporting Tool to predict the benefits of CERA-funded fuel conversion projects.



Project Status – Phase 1

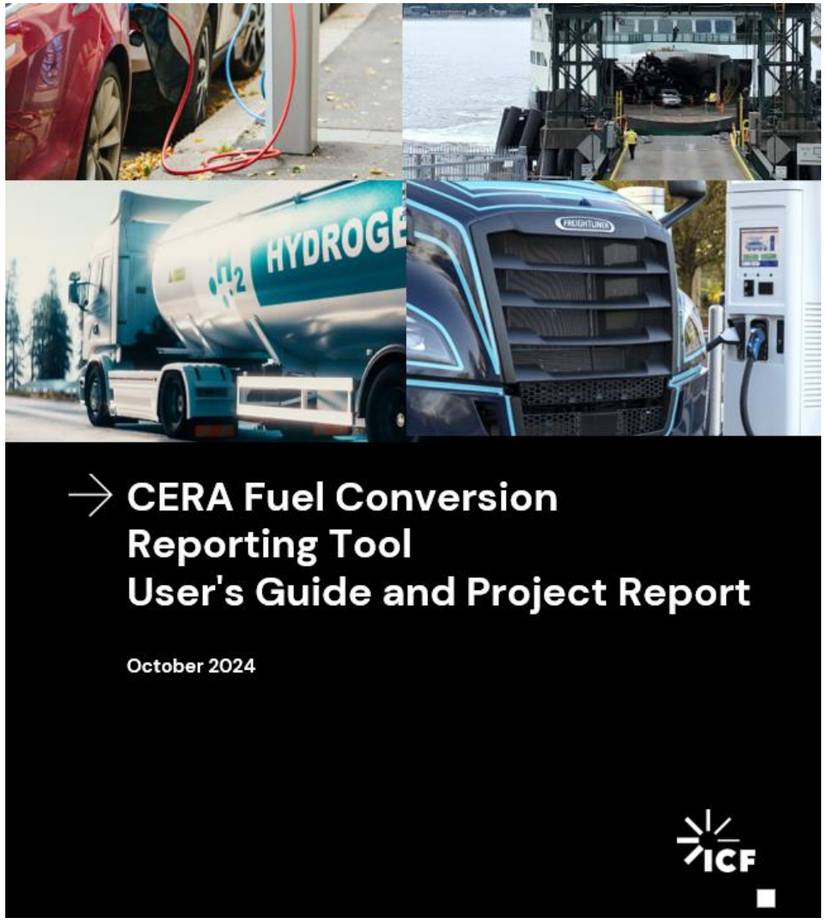


- **Strategy**
  - Work plan ✓
  - Interim Report ✓
- **JTC Meetings**
  - Hearing 1 ✓
  - Hearing 2
- **Tool Dev**
  - Blueprint ✓
  - Tool ✓
- **Tech Team**
  - Draft Workplan ✓
  - Dev Check 1 ✓
  - Dev Check 2 ✓
  - Draft Report & Tool ✓
- **Presentations**
  - Hearing 1 ✓
  - Hearing 2
  - STC/HTC (Optional)
- **Reporting**
  - Report Outline ✓
  - Draft Report & User Guide ✓
  - Final Report ✓

Report Overview

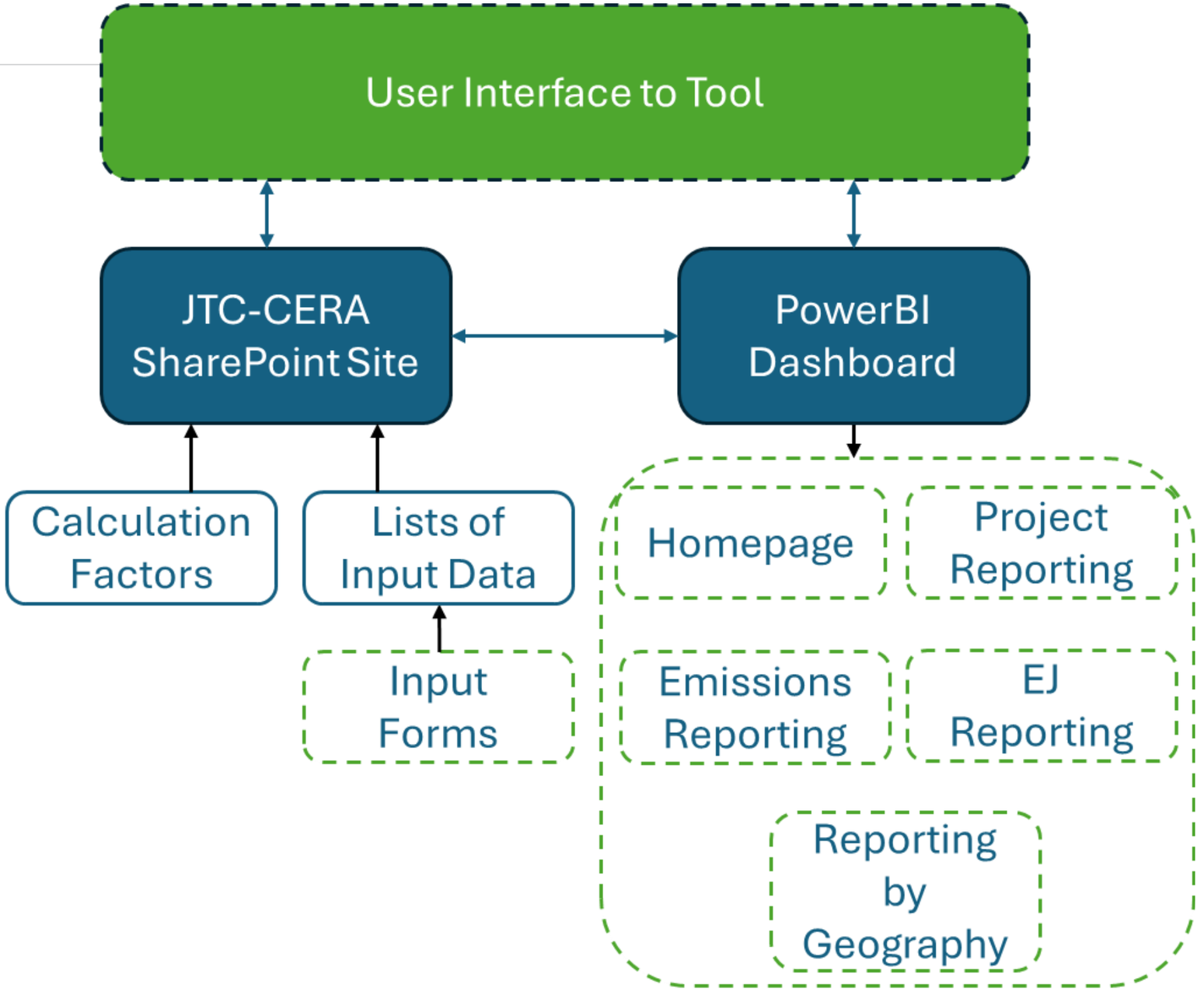
Executive Summary

1. Introduction
    1. Background and Project Summary
    2. Summary of the Tool's Purpose
    3. Overview of Phase 1 Project Activities
    4. Tool Summary
2. Tool Overview and User's Guide
    1. Status / Overview
    2. Quick Start Guide
    3. Additional Details on User Interface and Components
3. Methodology Details and Specifications
    1. Calculation Methodology and Data for the Different Project Element Categories
    2. Notes on Specifications, Assumptions, and Issues
    3. Some Potential Improvements to Consider
    4. Summary of the Tool's Architecture
4. Glossary of Terms
5. Appendices



Tool Overview

- The Tool is a cloud-based, dashboard application, currently considered a beta release.
- It is a dashboard application, built in Microsoft's SharePoint and PowerBI platforms.
- Users enter data using Microsoft forms.
- The dashboard has a series of "pages" to tailor reporting.



Reporting Categories and Measures in the Tool

Reporting Category	Measure	How Implemented in the Tool
Budgetary Impacts	Emission Reduction per Total Project Cost	Total emissions per year and cumulative emissions[1] divided by total project cost
	Emission Reduction per Funded Amount	Total emissions per year and cumulative emissions divided by CERA funded amount
Emissions Reduction	Annual Emissions Reduced	GHG and CAP emissions reduced per year
	Total Emissions Reduced	Total GHG emissions reduced over the defined project lifetime
EJ Impacts	Location of Reductions for Criteria Pollutants	Optional display of location of emission reductions (dependent on user inputs)
	Project in DAC[2] (Yes/No)	Is the project located in a DAC (dependent on user inputs of impacted Census tracts)
	Tribal support (Yes/No)	Does the project receive tribal support (dependent on user inputs)

Analysis Categories and Methodologies

EV Purchase

Projects that purchase **electric vehicles** to replace ICE vehicles

Based on CAPCOA Handbook

FCEV Purchase

Projects that purchase **hydrogen fuel cell vehicles** to replace ICE vehicles

Based on CAPCOA Handbook

Off-Road ZE Purchase

Projects that purchase **zero emissions** versions of **off-road equipment** (electric or hydrogen fuel cell) to replace ICE equipment (gasoline, diesel, CNG, or LPG fueled.)

Based on CAPCOA Handbook

EV Charging Infrastructure

projects that promote vehicle electrification by installing **electric vehicle charging infrastructure**

Based on CA LCFS program

FCEV Purchase

Projects that promote the use of zero emission hydrogen as a fuel by installing **hydrogen fueling infrastructure**

Based on CA LCFS program

EV Carshare

Projects that expand the use of **electric vehicles in carshare programs**

Based on CAPCOA Handbook

Watercraft Purchase (WSF Ferry)

Specific to **Washington State Ferry electrification** projects

Based on the WSF Ferry System Electrification Plan

ZE Watercraft Purchase (Non-WSF Ferry)

Non-WSF projects that purchase electric watercraft to replace fossil fueled vessels

Based on CAPCOA Handbook

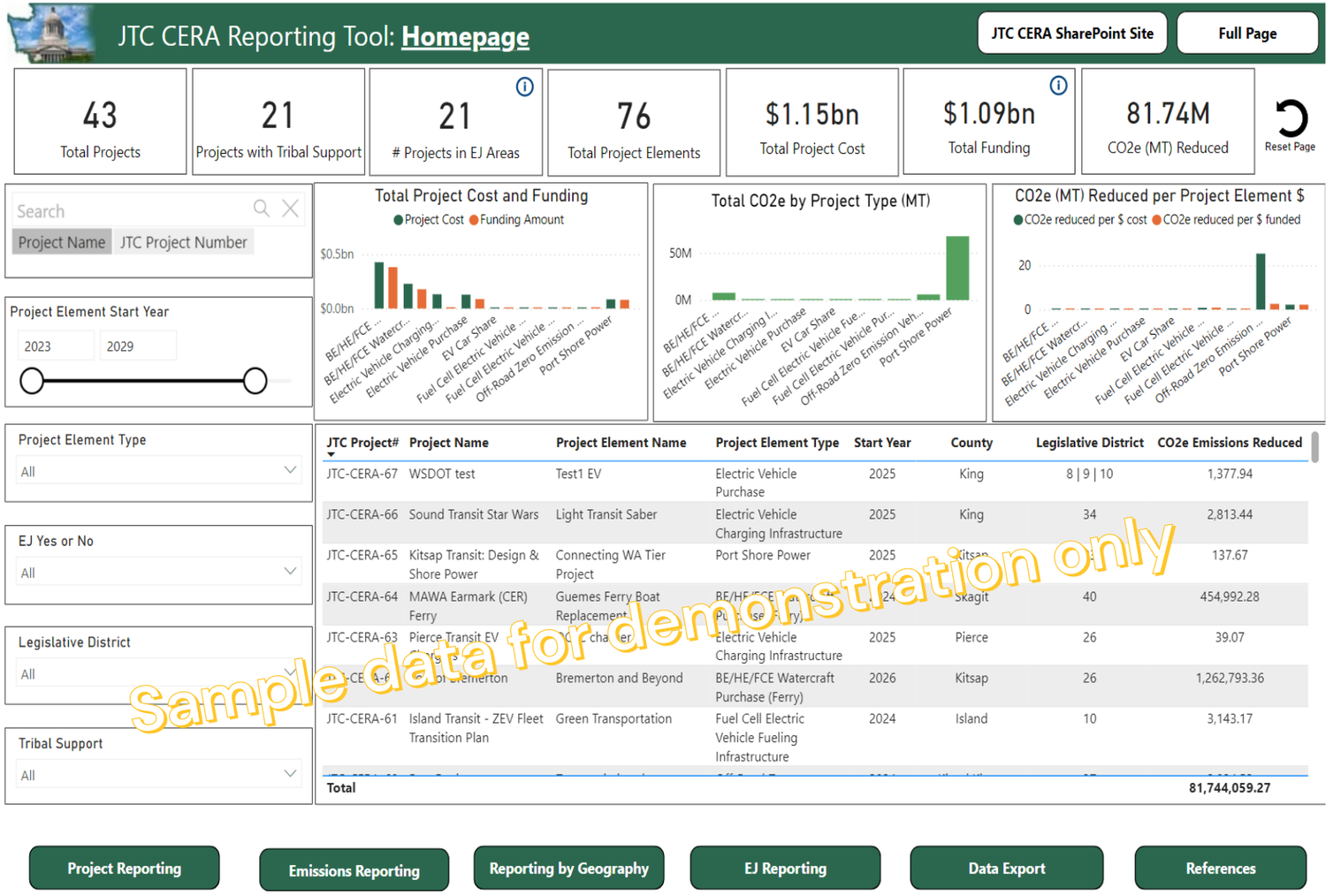
Port Shore Power

Projects that install **shore power for non-WSF vessels** to access instead of using their own auxiliary engines

Based on the EPA Shore Power Calculator

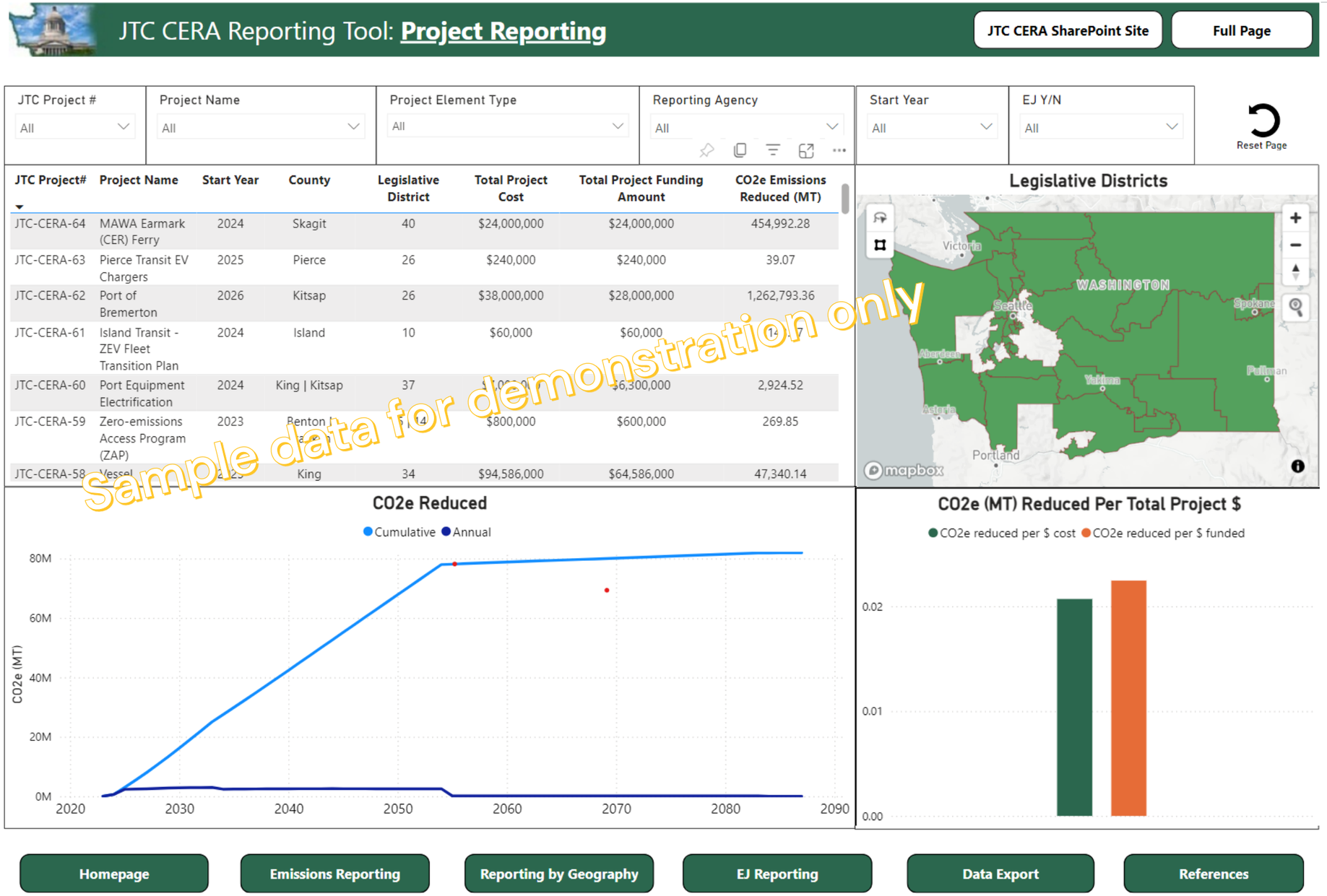
Tool Overview: JTC CERA Reporting Tool – Homepage

- Homepage
- Project Reporting
- Emissions Reporting
- Reporting by Geography
- EJ Reporting
- Data Export
- References



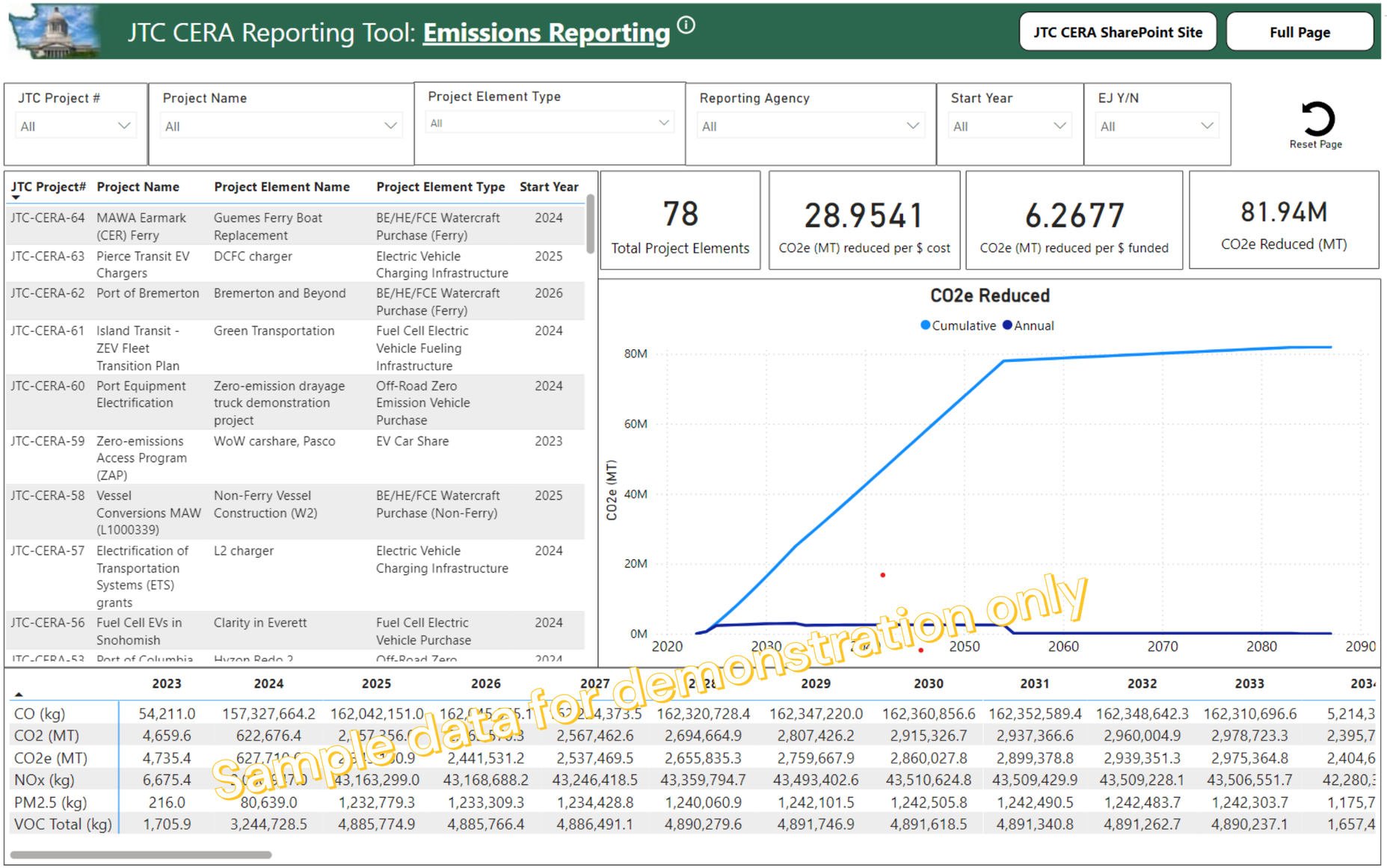
"I want a quick overview of CERA-funded projects in the state, or to quickly compare performance for the different types of projects."

Tool Overview: Project Reporting Page



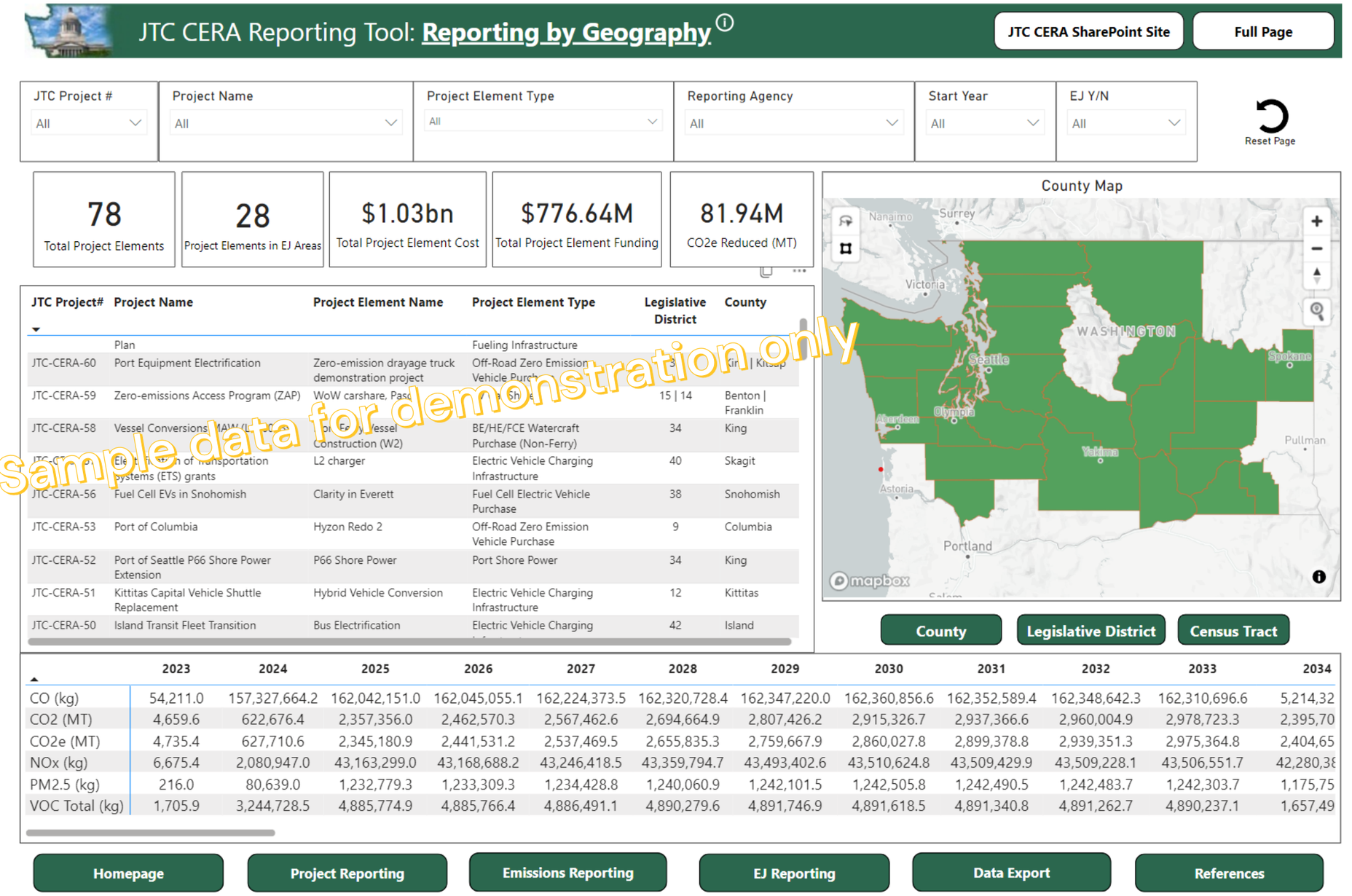
"I want an overview of the different projects happening across Washington."

Tool Overview: Emissions Reporting Page



"I want to understand how my project elements are forecast to perform in terms of emissions."

Tool Overview: Reporting by Geography



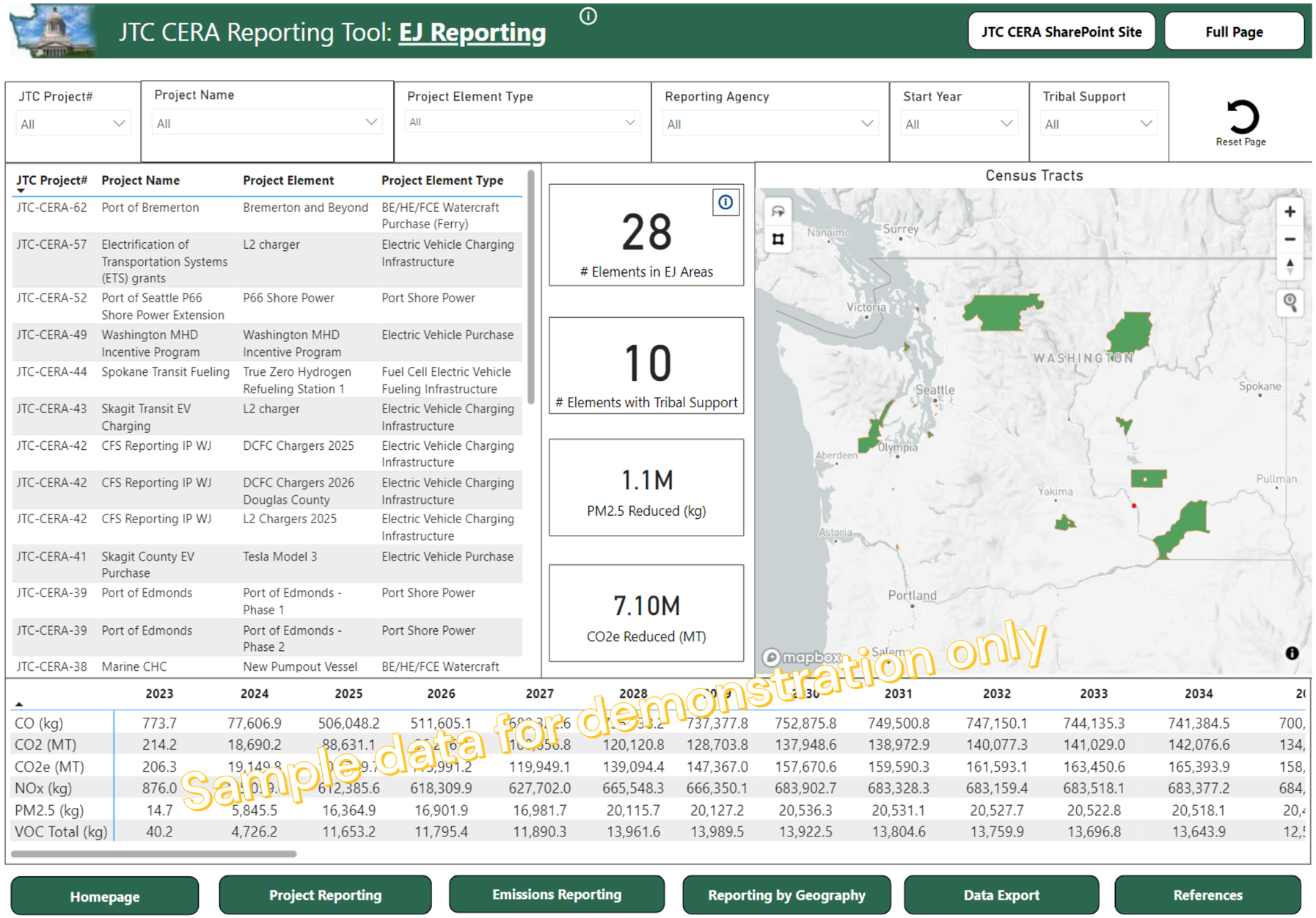
JTC Project#	Project Name	Project Element Name	Project Element Type	Legislative District	County
	Plan		Fueling Infrastructure		
JTC-CERA-60	Port Equipment Electrification	Zero-emission drayage truck demonstration project	Off-Road Zero Emission Vehicle Purch	3	Kin | Kitsap
JTC-CERA-59	Zero-emissions Access Program (ZAP)	WoW carshare, Pasc	[illegible]	15 | 14	Benton | Franklin
JTC-CERA-58	Vessel Conversions MAW (L [illegible]	[illegible] Vessel Construction (W2)	BE/HE/FCE Watercraft Purchase (Non-Ferry)	34	King
JTC-C[illegible]	Ele[illegible] of [illegible]ansportation systems (ETS) grants	L2 charger	Electric Vehicle Charging Infrastructure	40	Skagit
JTC-CERA-56	Fuel Cell EVs in Snohomish	Clarity in Everett	Fuel Cell Electric Vehicle Purchase	38	Snohomish
JTC-CERA-53	Port of Columbia	Hyzon Redo 2	Off-Road Zero Emission Vehicle Purchase	9	Columbia
JTC-CERA-52	Port of Seattle P66 Shore Power Extension	P66 Shore Power	Port Shore Power	34	King
JTC-CERA-51	Kittitas Capital Vehicle Shuttle Replacement	Hybrid Vehicle Conversion	Electric Vehicle Charging Infrastructure	12	Kittitas
JTC-CERA-50	Island Transit Fleet Transition	Bus Electrification	Electric Vehicle Charging	42	Island

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
CO (kg)	54,211.0	157,327,664.2	162,042,151.0	162,045,055.1	162,224,373.5	162,320,728.4	162,347,220.0	162,360,856.6	162,352,589.4	162,348,642.3	162,310,696.6	5,214,32
CO2 (MT)	4,659.6	622,676.4	2,357,356.0	2,462,570.3	2,567,462.6	2,694,664.9	2,807,426.2	2,915,326.7	2,937,366.6	2,960,004.9	2,978,723.3	2,395,70
CO2e (MT)	4,735.4	627,710.6	2,345,180.9	2,441,531.2	2,537,469.5	2,655,835.3	2,759,667.9	2,860,027.8	2,899,378.8	2,939,351.3	2,975,364.8	2,404,65
NOx (kg)	6,675.4	2,080,947.0	43,163,299.0	43,168,688.2	43,246,418.5	43,359,794.7	43,493,402.6	43,510,624.8	43,509,429.9	43,509,228.1	43,506,551.7	42,280,38
PM2.5 (kg)	216.0	80,639.0	1,232,779.3	1,233,309.3	1,234,428.8	1,240,060.9	1,242,101.5	1,242,505.8	1,242,490.5	1,242,483.7	1,242,303.7	1,175,75
VOC Total (kg)	1,705.9	3,244,728.5	4,885,774.9	4,885,766.4	4,886,491.1	4,890,279.6	4,891,746.9	4,891,618.5	4,891,340.8	4,891,262.7	4,890,237.1	1,657,49

Sample data for demonstration only

"I want to see the different project elements and spending by location (county, census tract, or Legislative district)."

Tool Overview: EJ Reporting Page



"I want to understand how much pollution may be reduced in Environmental Justice areas."

Tool Demo

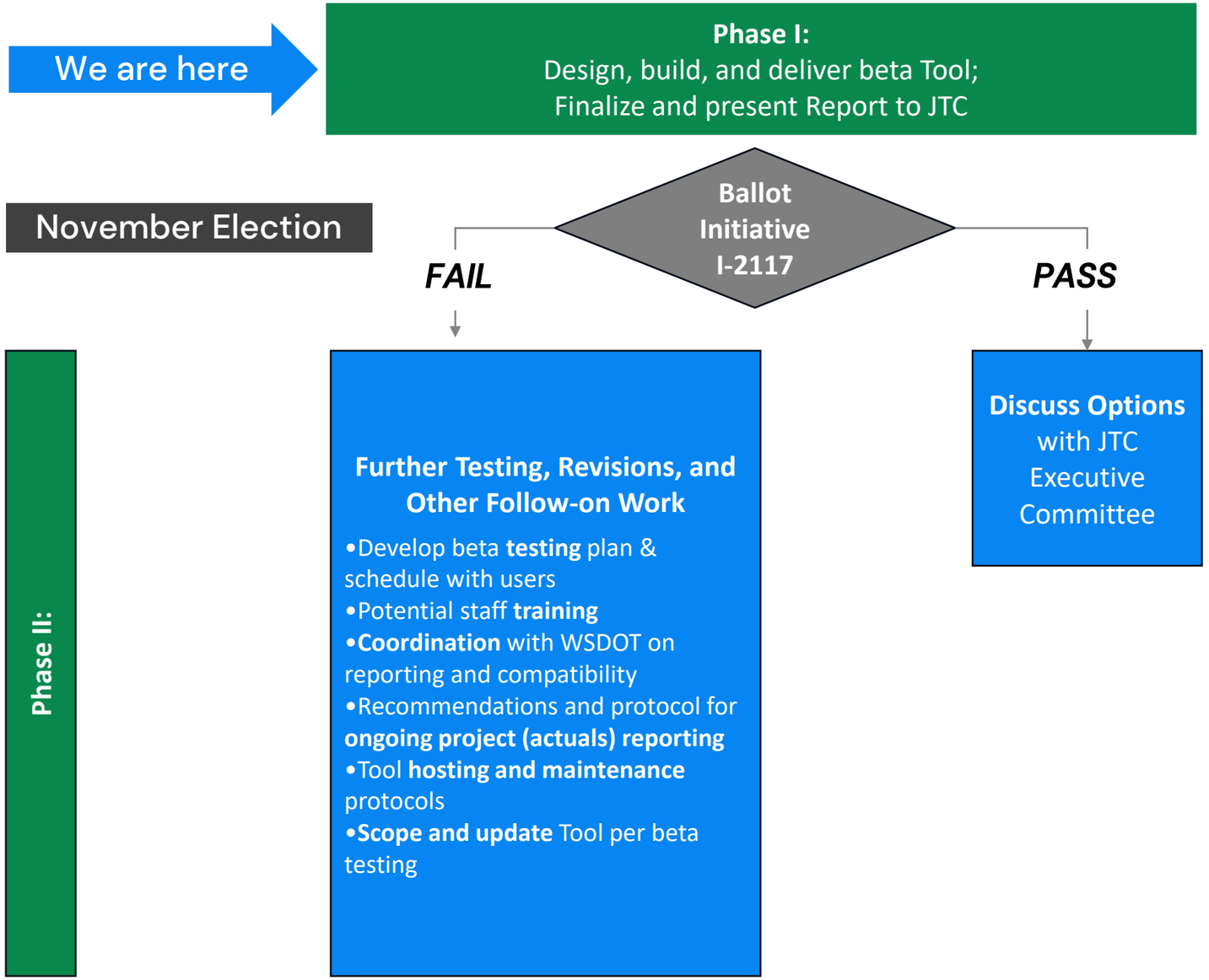
JTC CERA Reporting Tool

The Tool can be accessed* at the following link:
https://icfonline.sharepoint.com/sites/JTC-CERA

* by registered users only. Please contact ICF to be registered and given access.

Next Steps (Phase 2)

What happens next depends on the results of Ballot Initiative 2117



Get in touch with us:

Seth Hartley

Senior Air Quality Consultant
415.677.7164
Seth.Hartley@ICF.com

icf.com

linkedin.com/company/icf-international/

twitter.com/icf

https://www.facebook.com/ThisIsICF/

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