

GMA Trucking

Education Workshop 2:
How to Participate in the GMA Trucking Ecosystem

November 10, 2026

CENTER FOR GREEN MARKET ACTIVATION

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Meet the Team



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Workshop Timeline

Workshop 1
Oct. 6, 2026

GHG Accounting, Book-and-Claim, and GMA Trucking 101

+ Educate on keystone topics
+ Walk through the value-add for participants
+ Why we should care

Goal

+ Establish a shared foundation to build on in future workshops so that everyone understands the market problem and why we should act now

Workshop 2
November 10, 2026

How to Participate in the GMA Trucking Ecosystem

+ Lessons learned from RFP 1
+ ZETc generation
+ Data and reporting requirements
+ Roles of carriers and CPOs

Goal

+ Level set on ways to begin participating, what information is needed, and what upskilling and discussion should begin

Workshop 3
December 15, 2026
@ 10AM PT/1PM ET

Market Credibility, Contracting, and RFP 2 Readiness

+ Additionality
+ Allocation, claims, and double counting
+ Contracting considerations
+ Future procurement opportunities

Goal

+ Move carriers and CPOs towards a state of readiness for RFP 2, create space for questions, and integrate ecosystem participants

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Today's Agenda

01 Lessons from RFP I

02 ZETc Generation

03 Renewable Energy

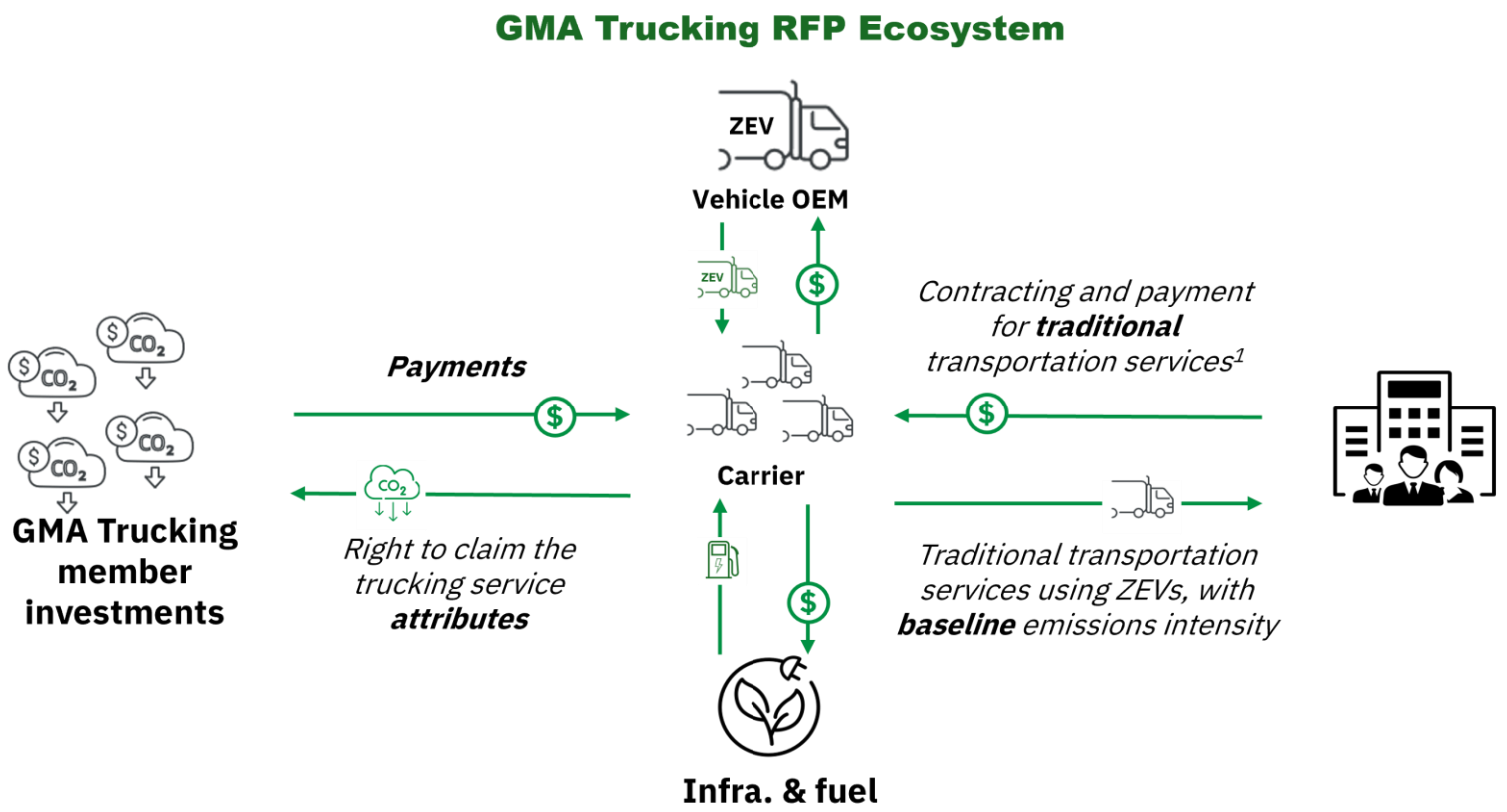
04 Procurement II

05 Next Steps

06 Q&A

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GMA Trucking procurements flow through the carrier, and successful bids need to support credible and scalable projects



[1] *Traditional services include pricing as well as emissions intensity of service; the physical shipper(s) whose goods are being transported on ZEVs funded through this project cannot claim the environmental benefits*

Bid Criteria

- Operate **Class 8** electric trucks backed by **renewable energy**
- Comply with the principle of **regulatory surplus**, going beyond any emissions reductions required by law

Bid Information Provided

- **Price** per unit of activity (tonne-km)
- ZET fleet **size**
- Annual **tonne-km** (tkm)
- Average **payload**
- Transport Operation Category (**TOC**)
- Net-new or underutilized assets
- **Financials** (e.g., TCO)
- Operating **History**

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Pilot Procurement

Shortlisted bids combined competitive pricing, demand match, and evidence of executability

Primary bid evaluation criteria

(Additional criteria and information was evaluated and considered along the process)

- **ZETc Pricing**
  Price ($) per unit of transport activity (tonne-km), which generally represented the premium for sourcing ZEVs, charging, fuel, etc. relative to traditional diesel trucking services

- **Volume Match**
  Alignment of response volume to demand from members, reducing need to reconfigure bid or select multiple carriers, increasing procurement efficiency

- **Bid Quality & Feasibility**
  Volume and quality of bid information, including, but not limited to, project timelines, technology used, infrastructure details, demand forecasting, and pricing visibility

RFP Responses

36 distinct bids from 9 different carriers

Shortlisting

15 bids from 6 carriers

Due Diligence

Deep technical analysis by a 3rd party expert consultancy on 3 finalists

Bid Selection

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GMA Trucking's pilot demonstrates meaningful initial scale, laying the foundation for larger and broader future deployments

nevoya

Primary bid evaluation criteria

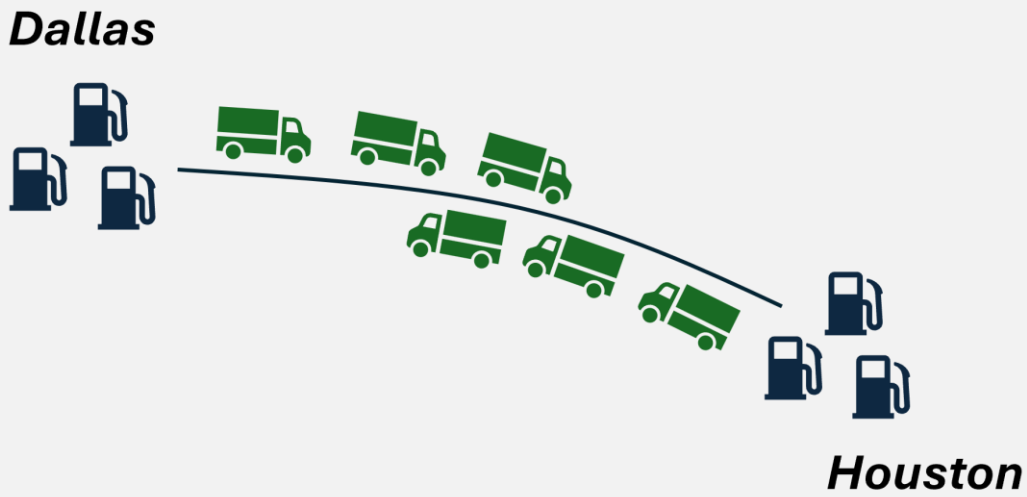
ZETc Pricing
*Nevoya's Texas bid was the **lowest priced** of those shortlisted*

Volume Match
*Nevoya's Texas bid was **most closely matched** to and flexible with GMA Trucking member **demand***

Bid Quality & Feasibility
*Nevoya provided **detailed proposal** and supporting documentation, **enabling greater degree of assurance** and transparency into project execution*

Proposal Details

The GMA Trucking pilot procurement enabled the deployment of **63 Class 8 BEVs and DCFC charging** in Texas - the largest known deployment of zero-emission trucks in the state!



Vehicles expected to begin operations in Q1 2027

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RFP submissions can improve bid competitiveness by reducing uncertainty

Key Lessons for Carriers

Right-Size the Opportunity

Match deployment to prospective buyer demand, while showing how the project can scale up or down depending on final demand and portfolio selection.

Submit a Competitive Price

Explain the major cost, utilization, infrastructure, and financing assumptions behind the certificate premium.

Reduce Execution Uncertainty

Provide evidence of, for example, vehicle access, site control, charging partners, utility engagement, financing, or an achievable schedule.

Bring a Real Project

Anchor the bid in identifiable freight, a realistic duty cycle, and a credible charging plan.

Be Data-Ready

Demonstrate how energy use, activity, renewable electricity, attribute ownership, and double-counting controls will be tracked.

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What is a ZETc?

A **ZETc**, or zero-emission trucking certificate, represents the transferable **environmental attribute** associated with eligible **zero-emission trucking activity**

ZETcs be **transferred and retired** by buyers to account for the environmental benefits of zero-emission freight activity within an applicable emissions-accounting framework

Depending on the pathway, ZETcs can be **quantified and traded** in units of **freight activity** (tonne-km) or **energy consumption** (kWh), based on verified carrier operational data

There are two approaches to generate a ZETc and calculate an electric truck's activity emissions intensity

Energy-Based

Energy Use & Emission Intensity

(kWh) *(gCO2e/kWh)*

Where emission intensity reflects the well-to-tank (WTT) emissions of the energy delivered into the vehicle (including losses from upstream T&D and charger-to-vehicle) plus the operational efficiency of the vehicle

Freight Work-Based

Freight Mass × Distance & Emission Intensity

(tonne-km) *(gCO2e/tonne-km)*

Where emission intensity reflects well-to-wheel (WTW) emissions per tonne-kilometer for a given vehicle class / category



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Participation starts with reliable operational records in both approaches

Energy-Based

Energy Use & Emission Intensity

(kWh) *(gCO2e/kWh)*

kWh consumed

Data sources include

- Truck telematics
- Charging provider / CMS receipts

Electricity emissions intensity

Data sources include

- EPA, Global Logistics Emissions Council (GLEC), Ecoinvent, or other emissions data sources
- Behind-the-meter solar
- Purchased renewable energy certificates (RECs)

Note, emissions intensity must include transmission and distribution losses and power generation infrastructure

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Freight Mass (avg weighted)

Data sources include

- Transportation management system (TMS)
- Bill of lading or carrier invoices
- Weight station data
- On-vehicle weight scales
- Written attestation of physical shipper customer
- Modeled data from sample

Note, this must include all empty backhauls or driving

Distance

Data sources include

- Transportation management system (TMS)
- Telematics

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Procurement II will likely enable ZETc issuance through either approach

Carrier Primary Data requirements, by approach

	Energy-based			Freight work-based		
	Electricity (kWh)	**Distance Traveled (km)**	**Cargo Mass (tonnes)**	**Electricity (kWh)**	**Distance Traveled (km)**	**Cargo Mass (tonnes)**
Procurement I	-	-	-	Required	Required	Required
Procurement II	Required	Optional*	Optional*	Required	Required	Required

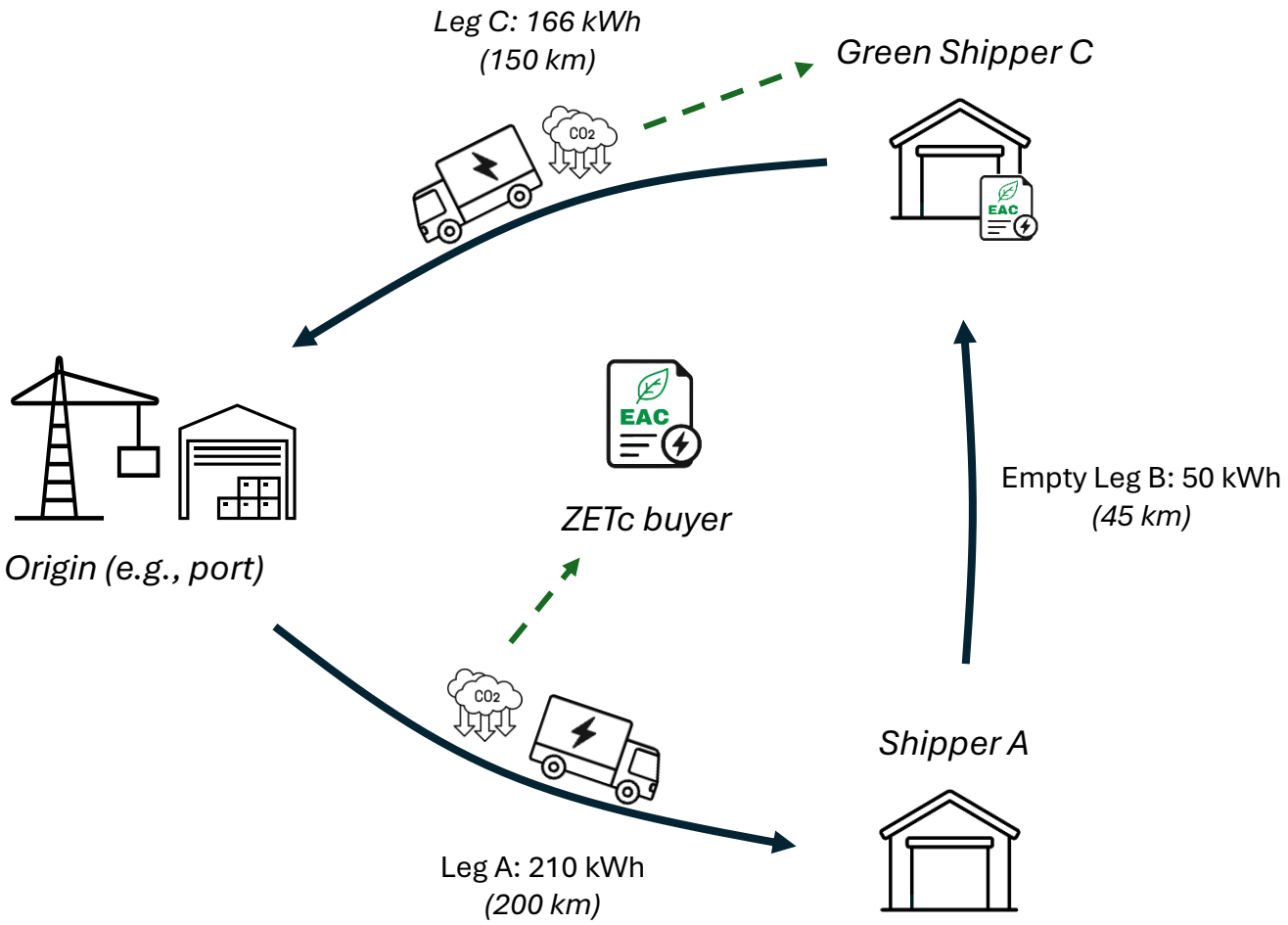
Rationale | GMA Trucking is introducing the Energy-based approach to help streamline issuance and accuracy by participating carriers unable to gather precise freight work data

***Additional note** | Tonne-kilometer or loaded mileage information are optional for ZETc issuance but may still be needed for the allocation of environmental attributes to physical recipients and disaggregated ZETc

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Empty journeys are proportionally distributed across all loaded miles, tkm, or kWh

Carrier providing attribute to physical shipper and generating ZETc
Illustrative example



How to determine eligible ZETc

(illustrative example using km to allocate energy-based ZETc)

Total kWh
166 + 210 + 50 = **426 kWh**

Loaded km
150 + 200 = **350 km**

Energy allocation
total kWh / loaded km = **1.22 kWh/loaded km**

Eligible ZETc from Leg A =
200km * 1.22 kWh/loaded km = **244 kWh**

Note: if using the freight-work based ZETc, loaded miles is substituted with total weighted tonne-km

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Once gathered, activity data is verified by third party and uploaded into registry

A registry is the data platform that tracks and transfers EAC and provides assurance and transparency to the market

1. Gather
Gather required activity data, provide to aggregator if using

2. Verify
Work with an approved verification body to assure data

3. Upload
Carrier or aggregator submits verified freight-work and electricity data

4. Convert & issue
The registry converts the data into the correct functional unit and issues the ZETc

5. Transfer
The ZETc is transferred from the issuer to the buyer within the registry

6. Retire
The buyer retires the ZETc and reports in their sustainability and emissions documentation

Example registry documentation
123Carbon

Modality	Country	Year	Status	Intervention (...	
Sea	Netherlands	2023	Reported	-	100.0
Sea	Netherlands	2023	Active	-	745.0
Sea	Netherlands	2023	Active	-	456.0
Sea	Netherlands	2023	Active	-	3,089.0
Road	Netherlands	2023	Active	-	3,012.0
Road	United State...	2023	Active	-	80.0
Road	United State...	2023	Active	-	270.0

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Renewable energy

Reduce charging emissions to capture more of the climate benefit of every electric truck deployed

Renewable procurement can **support incremental clean energy** in grids with carbon-intensive electricity generation

Help build a cleaner and **more resilient electricity system** needed to accommodate growing truck and charging demand

Renewable electricity backing the energy consumption is required for ZETc generation within GMA Trucking procurement

Key Procurement Criteria	Definition
Deliverability	The renewable energy (bundled or unbundled REC) must originate from a generator that is **physically capable of delivering electricity** to the specific grid region where the buyer consumes power. Typically defined by regional grid or balancing authority.
Bundled / Unbundled	Whether the RECs are sold together / contracted for with the physical electricity (bundled) or bought separately (unbundled). Bundled RECs are delivered through a power purchase agreement (PPA), or utility tariffs.
Temporal Matching	How closely the electricity consumption of the vehicles needs to be aligned with the renewable energy generation (i.e., hourly, daily, monthly, annually).
Additionality / Emissionality	Additionality refers to the extent to which the energy procurement supports new / incremental renewable energy generation; emissionality is a measure of how impactful that new renewable energy generation is on the specific grid it is deployed (e.g., a solar farm in a heavy coal region).

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GMA Trucking is currently exploring renewable energy sourcing requirements for bids; final sustainability requirements will be defined in RFP

Key Procurement Criteria	Okay	Better	Best
Deliverability	**Low geographic matching:** Clean electricity (Green-e eligible) for the vehicles is generated on **any power grid** in the US	**Flexible geographic matching:** Clean electricity for the vehicles is generated on the **same power grid, but flexibility** is allowed for interstate bids	**Full geographic matching:** Clean electricity for the vehicles is generated on **entirely the same power grid** where it will be used
Bundled / Unbundled	**Unbundled REC from spot market:** Renewable Energy Certificate (REC) is sold **detached** from its underlying physical electricity on the spot market	**Unbundled REC with VPPA:** REC is sold **detached** from its physical electricity but contractually supports additional energy generation	**Bundled RECs with PPA:** REC is sold **attached** to its underlying physical electricity and contractually supports additional energy generation
Temporal Matching	**21-month matching:** Links RECs with electricity usage within the **same calendar year**, the **first three months** of the **following year**, or the **last six months** of the **prior year**	**Annual matching:** Links RECs with electricity usage within the **same 12-month** calendar year.	**24/7 hourly matching:** Links RECs with electricity usage within the **same hour and day** in a year.

GMA Minimum Requirement

Note Additionality and emissionality requirements are being assessed by GMA Trucking members and any final procurement criteria will be communicated with the RFP

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Multiple parties can support the renewable electricity claim, but the claim is always tied to the carrier's transport-level activity

Roles and responsibilities of trucking ecosystem

	CPO / Charging Provider	Carrier	Shipper	Purpose
Provide Charging Data	✓	✓		Carrier or CPO provides electricity consumption and charging-loss data to the verifier and REC purchaser to quantify electricity use associated with the trucks
Provide Transport Activity Data		✓		Carrier provides vehicle activity data, such as distance, payload, and energy use to the verifier and REC purchaser so that all electricity use remains linked to scope 3 transport activity
Procure and Retire RECs	✓	✓	✓	The REC purchaser retires RECs equal to the total electricity usage to substantiate the renewable electricity claim associated with the 100% renewable backed zero-emission trucks
Prevent Duplicate Claims	✓	✓	✓	All parties maintain and communicate records necessary to ensure the same renewable electricity or associated ZET attributes are not claimed or duplicated by more than one party

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New to Procurement II

Pathway for **aggregators** to combine eligible activity across multiple carriers and support data management, ZETc issuance, and participation by smaller fleets

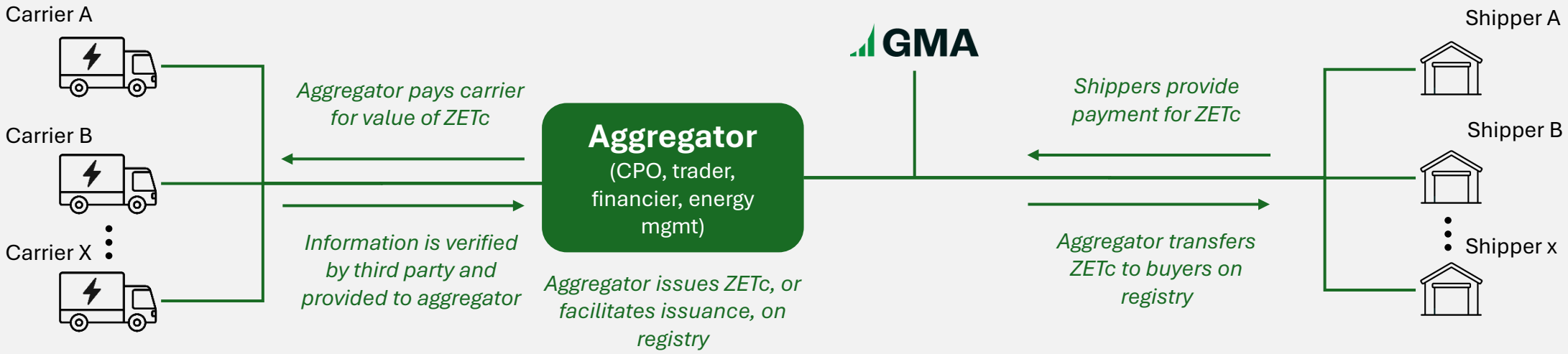
We are seeking a **portfolio of projects** across the **continental United States**, with the goal of supporting multiple regions, carriers, and operating models

We will prioritize opportunities in **ZET SCALE hubs**, where freight density and deployment conditions may provide a stronger foundation for zero-emission operations

Carriers may **combine physical zero-emission service** for interested shippers **with ZETc sales** from other eligible activity, provided environmental attributes are clearly allocated and not double counted

GMA Trucking is providing additional details on a supply-side aggregator model

Aggregator model, illustrative description



Potential benefits of the aggregator model

- Enable participation from carriers who may not be sophisticated or large enough to bid on their own
- Lead to the deployment of more trucks over a broader geographic range
- Drive lower ZETc prices

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Carrier RFI is now live

The RFI is designed to help GMA Trucking refine the structure of our next procurement and better understand **carrier readiness**, **deployment opportunities, charging needs, and preferred commercial arrangements**. Carrier feedback will play a critical role in shaping the next procurement cycle.

- **Where to find it**

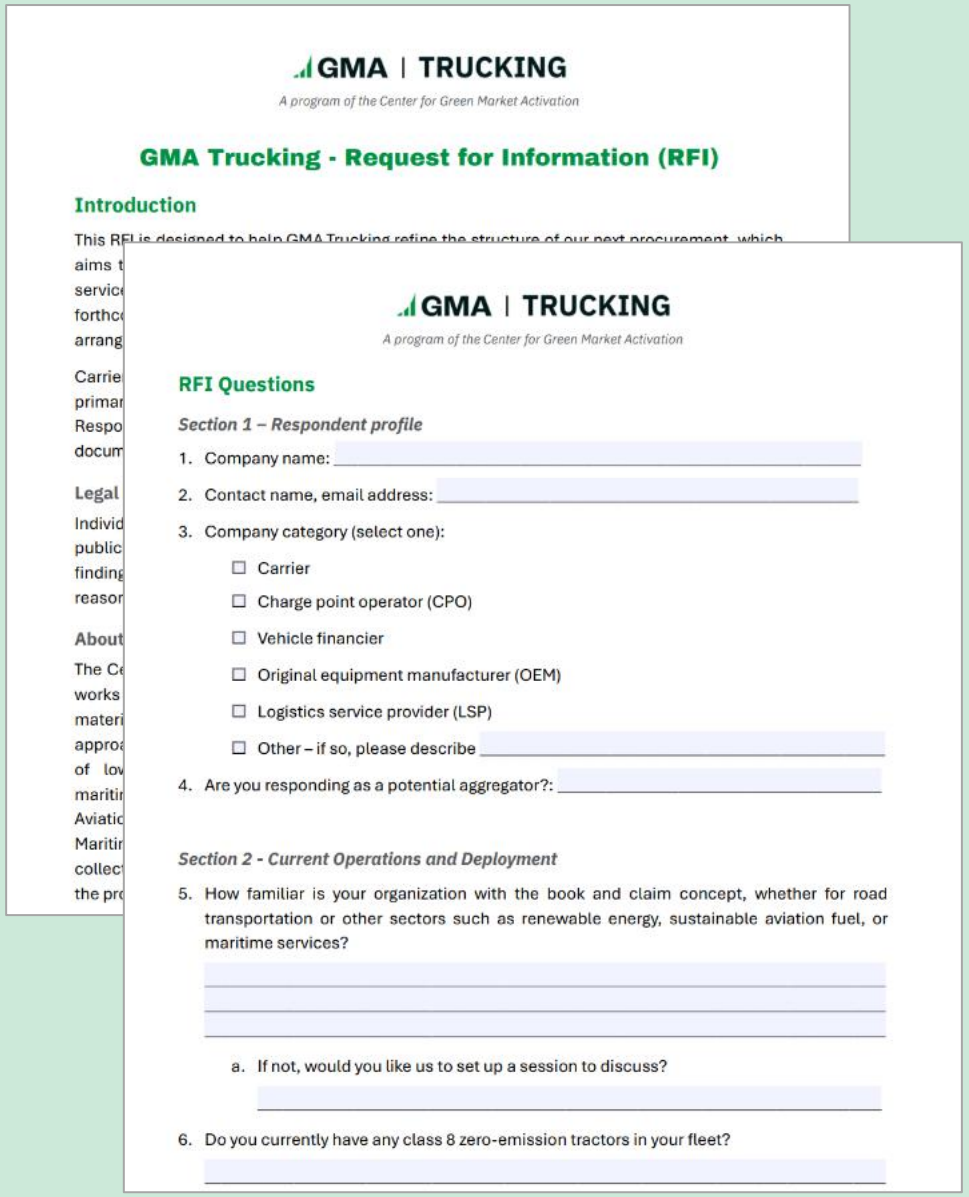
  gmacenter.org/rfps

- **Due**

  December 4th, 2026

- **Submission**

  Responses may be submitted by filling out the document inline and submitting through the submission portal



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GMA Trucking - Request for Information (RFI)

Introduction

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RFI Questions

Section 1 – Respondent profile

1. Company name: _____
2. Contact name, email address: _____
3. Company category (select one):
   - ☐ Carrier
   - ☐ Charge point operator (CPO)
   - ☐ Vehicle financier
   - ☐ Original equipment manufacturer (OEM)
   - ☐ Logistics service provider (LSP)
   - ☐ Other – if so, please describe _____
4. Are you responding as a potential aggregator?: _____

Section 2 - Current Operations and Deployment

5. How familiar is your organization with the book and claim concept, whether for road transportation or other sectors such as renewable energy, sustainable aviation fuel, or maritime services?

   a. If not, would you like us to set up a session to discuss?

6. Do you currently have any class 8 zero-emission tractors in your fleet?

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Next in the series

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Q&A



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Thank You