

# Mobility innovation hubs: catalyzing future mobility

CHIHUAHUA CHARGING FORWARD

MAY 2024



SECRETARÍA  
DE INNOVACIÓN  
Y DESARROLLO ECONÓMICO



WILLIAM DAVIDSON INSTITUTE  
AT THE UNIVERSITY OF MICHIGAN



# About this report

Mobility innovation hubs are emerging in different markets as a tool to support local innovation ecosystems. These hubs are focused on supporting the development of future mobility technologies such as electric vehicles, autonomous vehicles, and more. The set up and goals of these hubs can vary depending on the context, available resources, and stakeholders involved. To help stakeholders around the world assess the viability of establishing a mobility innovation hub – whether as a new entity or by leveraging existing assets – this report examines several hub models from different markets. In the following pages we present information about these hubs, key insights, and takeaways for other actors.

This work is part of the Chihuahua Charging Forward project implemented by the William Davidson Institute at the University of Michigan with support from the Secretaría de Innovación y Desarrollo Económico and the Instituto de Innovación y Competitividad of the state of Chihuahua in Mexico.



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# Chihuahua Charging Forward



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The [Chihuahua Charging Forward project](#) seeks to help Chihuahua create a path to success in the transition to e-mobility by helping stakeholders across sectors learn about relevant tools and strategies; helping companies understand and tap into EV-related opportunities, and facilitating collaborations and expertise around e-mobility with academia.

The Secretaría de Innovación y Desarrollo Económico (SIDE) fosters and facilitates the economic development of Chihuahua. Working closely with a wide range of stakeholders, SIDE seeks to increase the competitiveness of local businesses through innovation to generate wealth and employment, thereby enhancing the quality of life for the people of Chihuahua.

The Instituto de Innovación y Competitividad is a government agency that seeks to strengthen and promote scientific, technological and innovation capabilities through strategic research, technological development, and innovation projects to improve productivity and competitiveness across the state of Chihuahua.



# About WDI



WILLIAM DAVIDSON INSTITUTE  
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## SOLVING FOR BUSINESS

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BECAUSE BUSINESS DRIVES ECONOMIC  
GROWTH & SOCIAL FREEDOM

[WDI](#) is a research and educational non-profit affiliated with the University of Michigan. Our mission is to equip economic decision makers in low- and middle-income countries (LMICs) with the tools for commercial success. In the energy and mobility space we:

- Conduct research and provide consulting services to help innovators and entrepreneurs tap into new opportunities;
- Develop tools and resources to highlight business innovations and disseminate knowledge; and
- Craft and implement partnerships across sectors and markets to advance the energy transition in LMICs.

# Overview

The objective of this report is to help stakeholders around the world understand and evaluate the types of benefits and costs associated with different models for mobility innovation hubs and understand if and how such a hub could benefit their local e-mobility ecosystem.

The report is organized as follows. We first describe the background and context of this research, and then present **six mobility innovation hubs** in different geographies – Canada, Chile, Mexico, South Africa, and the U.S. – highlighting their key features and business models. We describe common characteristics, differentiators, and key challenges across the hubs, and then present an analysis and insights relevant to other actors in this space. We describe our methodology and sources in the appendix.



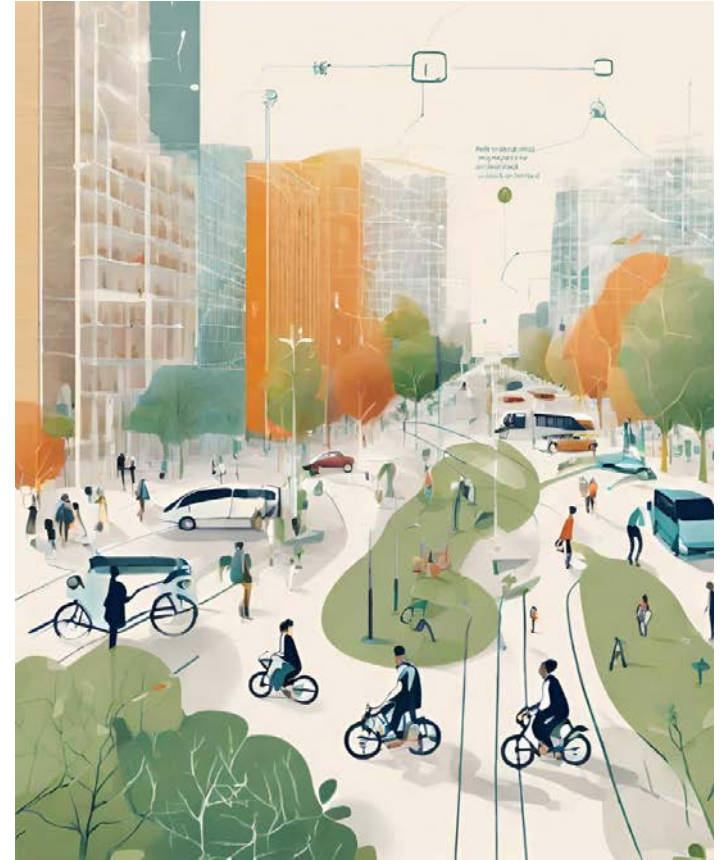
# BACKGROUND

# Future mobility trends bring changes

Four key trends are impacting mobility at a global level: autonomous, connected, electric, and shared (together, **ACES** and often referred to collectively as **future mobility**). Of these trends, electrification is arguably one of the most advanced (in LMICs and developed markets alike) and will be the primary, though not exclusive, focus of this report.

With these future mobility trends come major shake-ups to the dynamics between players that are involved in mobility, leading to new challenges and opportunities for all players in the ecosystem – from industry to government to civil society and more. Thoughtfully preparing for the changes these trends will necessitate is on the minds of many decision-makers, especially in the areas of infrastructure, policy, workforce development and private sector engagement.

Innovation is needed to address challenges and take advantage of opportunities brought about by these changes, and new players are emerging around the world to fill this need.



# New paradigm, new players

While existing actors in the ecosystem all have roles to play in managing changes brought about by future mobility trends, as with any major transition, new players can help spur innovation in a major way. Such players can bring new thinking, new resources, and new ways of working to take advantage of new opportunities. **Mobility innovation hubs\*** are emerging as such players around the world.

These hubs come in different forms depending on their specific goals and the context in which they operate, but have some features in common. Broadly speaking, they exist to **bring together and support players in their ecosystem** (i.e., the context in which they operate, and players could include entrepreneurs, small and large businesses, investors, government, academia, others) to advance shared goals in the areas of **future mobility**.

They may be standalone non-profit or for-profit organizations or partnerships, and they **engage in a variety of activities depending on their audience and goals** (e.g. managing co-working spaces, manufacturing facilities, commercialization support, training, networking, and more).

\*Note that mobility innovation hubs are not to be confused with other types of mobility hubs, which are physical places in a community that bring together public transit, bike share, car share, and other means of transportation to facilitate the movement of people and goods.



# Operating in an ecosystem

Mobility innovation hubs are carving out new spaces and roles in the ecosystems in which they operate. Considering the players, characteristics of, and dynamics within these ecosystems is important to understand what role a hub can play, what value it can create, and for whom. As we will see, each mobility innovation hub has different context, goals, and activities, but there is potential to serve as an ecosystem orchestrator or play different roles across the ecosystem.



# Ecosystem enablers

Additionally, when we think about key factors that can enable a major technology shift in a particular context, we think of the **policy framework**, **infrastructure**, and **workforce**. Mobility innovation hubs can play roles across each of these enablers in their local ecosystems. Here we describe key features of these enablers related to mobility, and will later use this as a lens for our analysis.



## Policy Framework

- Sets the intention and strategic direction at various levels; sends a clear signal to market about requirements and regulations; and provides a platform to align stakeholders.
- Can focus on adoption, production, or both.



## Infrastructure

- Tangible: physical spaces and facilities (for tech development, testing, manufacturing, etc.).
- Intangible: environment that is conducive to innovation and ecosystem mindset.



## Workforce

- Implications at two levels: reskilling current workforce and developing new talent pipeline.
- Industry, government, academia all can play a role on addressing training needs.

# Mobility innovation hubs as catalysts for collaboration

Overall, there is increased need – and opportunity – for players to help push the boundaries of innovation, serve as a platform for key stakeholders to converge, and catalyze collaboration in a particular ecosystem.

As a result, new mobility innovation hubs are launching, and more are being conceptualized around the world. As in any emerging space, there is a need to gather, analyze, and share information to help inform the successful evolution of existing mobility innovation hubs and the design of others.

As such in the following section we present information about six mobility innovation hubs from around the world. Most of these hubs are still quite new, so we are capturing learnings as they continue to grow and change.



**FEATURED  
MOBILITY  
INNOVATION  
HUBS**

# Hubs included

We selected six mobility innovation hubs to examine in this report. This is not an exhaustive list of such hubs around the world; we sought variety in terms of models, geographies (with an emphasis on North and South America given the impetus of this report), focus areas, and stages of development. Some of these hubs have multiple locations, but we focus primarily on one for each in this report.

This section provides more detail on the context in which they operate, the services they provide, resources, and future plans.



# Summary of hubs examined

Hub name	Location examined	Organization type	Quick take
<a href="#"><u>California Mobility Center</u></a>	Sacramento, US	Non-profit	Leverages resources and influence of local anchor institutions (regulatory bodies, utilities, universities) to advance commercialization of e-mobility technologies, attract companies to the region, and prepare the local workforce.
<a href="#"><u>Canadian Automobility Hub</u></a>	Windsor, Canada	Partnership of multiple organizations	Leverages physical and digital infrastructure, building connections between research institutions and industry to support EV-related production, workforce training, and economic development in the local region.
<a href="#"><u>Emasa Mobility Hub</u></a>	Santiago, Chile	For-profit	Jack-of-all trades for all mobility actors, helping to train, serve existing businesses and generate new ones and transform existing businesses and infrastructure.
<a href="#"><u>Newlab</u></a>	Detroit, US	For-profit	Place-based approach to driving growth of deep-tech startups and regional economic development through technology infrastructure, industry partnerships, and investment capital.
<a href="#"><u>Supercool Mobility Center</u></a>	Puebla, Mexico	For-profit	One-stop shop for sustainable mobility solutions with state-of-the-art local showrooms linked to global online marketplace.
<a href="#"><u>uYilo</u></a>	Eastern Cape, South Africa	Housed within university	Preparing South Africa's automotive industry – incumbents and new entrants – and workforce for transition to e-mobility through technical testing facilities, pilots, and trainings.



## California Mobility Center

*Leverages resources and influence of local anchor institutions (regulatory bodies, utilities, universities) to advance commercialization of e-mobility technologies, attract companies to the region, and prepare the local workforce*

# California Mobility Center - Overview

## Background

[The California Mobility Center](#) was founded in 2021, after a 3-4 year process of ideation and stakeholder engagement to align on the concept and secure resources. The impetus was to bring together regulatory agencies, anchor institutions, and companies in the state's capital to make progress on the state's ambitious electrification and decarbonization goals. As such their priority area at present is advancing electric mobility, with a plan to broaden their focus on other areas of mobility. The Center has a focus on both policy and business, leveraging the resources and reach of local anchor institutions (universities, state agencies, local utility) to advance policy and commercialization of research and new technologies related to electrification.

## Key stakeholders

- California state agencies (California Air Resources Board, energy commission)
- Sacramento State University
- Sacramento Municipal Utility District (SMUD, electric utility company)
- Partners: startups, new companies, established companies





# California Mobility Center - Key Services

<p><b>Service</b></p>	<p><b>Ramp up factory and showroom</b> The Center currently has a 25K square foot factory and showroom but aims to construct a 25-acre site that will include a state-of-the-art ramp-up factory for entrepreneurs and startups to use to do R&amp;D, produce, test, and pilot new products and services. This will include equipment for battery R&amp;D, advanced vehicle technology, charger testing, vehicle test track, and showcase space and will be an extension of the Sacramento State University campus.</p>	<p><b>Commercialization collaborative</b> The Center orchestrates connections among startups, regulatory agencies, and anchor institutions, to advance the interrelated goals of research, education, innovation, and commercialization. The Center facilitates pilot projects with the local electrical utility, connects startups and regulatory agencies to advance shared goals, and allows startups and researchers to tap into local student and workforce talent.</p>	<p><b>Training &amp; workforce development</b> The Center offers trainings in response to local demand. E-forklift operator training is currently in great demand because there are immediate job placements available. They plan to expand these offerings through strategic partners, align with national industry associations for certificates, and leverage the technology in the future ramp up factory for trainings.</p>
<p><b>Audience</b></p>	<p>R&amp;D functions of future mobility companies from around the world, which the Center seeks to attract to the region.</p>	<p>Startups advanced enough to engage with regulatory agencies and the local electrical utility, university researchers.</p>	<p>Local talent interested in electrification opportunities (with an emphasis on historically disadvantaged communities) and current students (high school students interested in trades, community college, university).</p>
<p><b>Resources required</b></p>	<p>Indoor and outdoor space, equipment, staff.</p>	<p>Research and manufacturing facilities, relationships with each type of stakeholder.</p>	<p>Trainers, space, and related equipment. The Center seeks to partner with other organizations offering trainings to adapt their content to the local context.</p>
<p><b>Value</b></p>	<p>This facility is aimed to attract companies from around the world to do R&amp;D, scale up manufacturing, and tap into local talent.</p>	<p>Paired with the ramp up factory, this relationship facilitation is the Center's key value proposition to its various stakeholders. Engaging with regulators and the local electrical utility is also a differentiator.</p>	<p>Helps build a local workforce that can meet the needs of current and future e-mobility companies that the Center works with.</p>

# California Mobility Center - Resources and Future Plans

## **Initial investment**

The local electrical utility, Sacramento Municipal Utility District, made a sizeable initial investment that has supported operations to-date. Federal, state, and local grants have been used to develop initial workforce development programs, and the California state university system gifted the land that the new facility will be built on.

## **Revenue sources**

While in the first couple of years of operation the Center was supported by a membership model for companies and other institutions as well as grant funding, it is now working to change its business model in response to new market needs. Beyond raising significant investments for capital construction and technology acquisition for the new facility, planned revenue sources include federal, state and local grants, and a to-be-determined fee structure for startups and more established companies (the Center is considering a mix of equity, fee for space rental, and more).

## **Key expenses**

Construction and equipment for a new facility, support for a lean staff.

## **Future plans**

In the near term, the Center is laser focused on fundraising for building the new facility and laying the groundwork to attract new partners.



## Canadian Automobile Hub

*Leverages physical and digital infrastructure, building connections between research institutions and industry to support EV-related production, workforce training, and economic development in the local region.*

# Canadian Automobility Hub - Overview

## Background

The [Canadian Automobility Hub](#) was launched in 2021 and is a three-way collaboration between for-profit, nonprofit and government entities aimed at transforming the Windsor-Essex region in Canada into an automobility hub by leveraging its rich automotive heritage and expertise. The entities involved in hub-related activities are [Automobility Enterprises](#) (for-profit, focused on small-batch manufacturing, training, and consulting), St. Clair College (non-profit, focused on research innovation and training), and Invest WindsorEssex (government, focused on economic development). With a strong focus on clean tech and zero-emission vehicles, the hub serves as an innovation center for startups, small and medium-sized enterprises (SMEs), original equipment manufacturers (OEMs), and research institutions. By fostering collaboration between industry and academia, the hub seeks to drive innovation, economic growth, and job creation in the automobility sector.

## Key stakeholders

- Local industry associations, startups, SMEs, established companies, government agencies and academic institutions
- Automobility Enterprises



# Canadian Automobility Hub - Key Services

<p><b>Service</b></p>	<p><b>Ramp-up factory</b> Automobility Enterprises is developing a ramp-up factory, offering a platform for both industry and research to industrialize components and full mobility solutions. This will house machinery necessary for manufacturing mobility prototypes and small batches. A virtual reality (VR) cave is also housed at an Invest WindsorEssex facility that has capabilities for digital twinning and prototyping and virtual collaboration.</p>	<p><b>Training</b> Automobility Enterprises, in collaboration with Invest WindsorEssex and PEM Motion, offers general and technical trainings on topics related to EVs and batteries for a variety of stakeholders in the local region. They are also exploring scaling training using VR capabilities. St. Clair College is also developing curriculum for a two-year diploma.</p>	<p><b>Consulting</b> Automobility Enterprises provides technical consulting services to startups, companies and research institutions developing automobility solutions. In addition to targeted consulting projects they have collaborated on several pilot projects, including the e-conversion of a F150 truck with St. Clair College.</p>
<p><b>Audience</b></p>	<p>Industry partners, research institutions, startups and SMEs.</p>	<p>Local and global stakeholders with interest in automobility, from high schoolers to experienced industry professionals.</p>	<p>Startups, companies, research institutions.</p>
<p><b>Resources required</b></p>	<p>Advanced manufacturing machinery, prototyping tools, skilled technicians, funding for prototype development, digital software, and equipment.</p>	<p>Expertise, space, VR capabilities.</p>	<p>Expertise to fit consulting needs.</p>
<p><b>Value</b></p>	<p>Provides a centralized and well-equipped space for cost-efficient prototyping and testing of new mobility solutions. Enables collaboration and innovation in the development of automobility technologies.</p>	<p>Grows awareness and knowledge related to automobility topics to build the local ecosystem related to these topics. Also grows network and potential collaboration opportunities through engaging non-local players virtually.</p>	<p>Provides manufacturing and other technical expertise, automotive experience, and builds network of organizations working on these topics.</p>

# Canadian Automobility Hub - Resources and Future Plans

## **Initial investment**

Each partner has brought resources to implement hub activities. St. Clair College has provided space, equipment, and researchers, Invest WindsorEssex has provided space, personnel, and infrastructure for VR, and Automobility Enterprises has provided expertise.

## **Revenue sources**

Key revenue sources for Automobility Enterprises aim to be fees or commission from contract manufacturing, consulting fees, and training enrollment fees. Invest WindsorEssex aims to attract new businesses in the region and generate revenue from the VR cave. St. Clair College generates revenue from training program enrollment and grants.

## **Key expenses**

Each organization has a small staff focused on this work. In terms of infrastructure, the VR cave is a resource that requires maintenance and staffing. St. Clair uses its hub-related facilities for other research and teaching, and Automobility Enterprises uses outside facilities for contract manufacturing rather than operating a facility itself.

## **Future plans**

The key focus areas for further development are ramping up the contract manufacturing activities, expanding training programs to new audiences and using VR capabilities, and engaging in more consulting.



## **Emasa Mobility Hub**

Santiago, Chile

***Jack-of-all trades for all mobility actors, helping to train, serve existing businesses and generate new ones, and transform existing infrastructure.***

# Emasa Mobility Hub - Overview

## Background

**EMASA Mobility Hub** (referred to throughout these slides as the Hub) was founded in 2022 in Santiago, Chile, focusing on e-mobility, shared mobility, autonomous vehicles, and connected vehicles. It was established as a collaborative platform to tackle future mobility challenges in the region. They spun out various organizations, which now include Emasa Mobility Hub, Emasa Training Center, and Emasa Ventures. Emasa, the parent company, was founded in 1958 as the exclusive distributor of Bosch in Chile; now it is a leading mobility company in the region, with operations in Chile, Peru, and Colombia.

## Key stakeholders

- Startups, SMEs, corporations, investors, accelerators, government agencies, municipalities, educational institutions, and innovation centers in the region
- Bosch and 70+ other providers of automotive equipment and tools





# Emasa Mobility Hub - Key Services (1)

<b>Service</b>	<b>Products and equipment for the EV industry</b> The Hub offers a comprehensive range of parts and components for EVs, catering to startups, SMEs, corporations, and individuals in the e-mobility ecosystem. The Hub ensures access to essential components necessary for the operation and maintenance of EVs.	<b>Consulting services</b> The Hub provides expert consulting and assessment services for companies and organizations seeking guidance on e-mobility strategies and projects. Through personalized consultations and access to industry experts, the Hub helps clients navigate the complexities of the e-mobility industry, ensuring the successful implementation of their projects.	<b>Network building and marketing: co-working spaces, showroom, event venues, and digital platforms</b> The Hub facilitates networking and collaboration among members of the mobility ecosystem through co-working spaces, event venues, and digital platforms. By fostering a collaborative environment, the Hub promotes knowledge sharing, business opportunities, and innovation across the local ecosystem.
<b>Audience</b>	Startups, SMEs, corporations, and individuals engaged in the EV value chain.	Companies and organizations seeking guidance on e-mobility strategies and projects.	Members of the mobility ecosystem, including industry professionals and stakeholders.
<b>Resources required</b>	Supply chain network for sourcing and distributing auto parts, tools and equipment.	Expertise to fit consulting needs.	Co-working spaces, event venues, and digital platforms for networking.
<b>Value</b>	Provides access to essential components for EVs and their maintenance, supporting the growth of EV adoption.	Provides expert advice and support for e-mobility projects, helping clients navigate the complexities of the industry.	Facilitates collaboration, knowledge sharing, and business opportunities within the e-mobility community.

# Emasa Mobility Hub - Key Services (2)

<p><b>Service</b></p>	<p><b>EV fleet management</b> The Hub provides advanced technology solutions for fleet operators and managers, including fleet management platforms, telematics devices, and diagnostic equipment. These technologies help optimize fleet operations, enhance efficiency, and reduce costs, supporting the transition to sustainable mobility solutions.</p>	<p><b>EV charging infrastructure and management</b> This includes the design, installation, and maintenance of EV charging stations for various applications such as commercial and public settings. The service also includes the provision of a management tool for charging infrastructure, ensuring efficient and reliable operation.</p>	<p><b>Trainings</b> The Hub offers 50+ specialized online and in-person training programs for technicians, engineers, and managers in the mobility sector. These programs cover various aspects of e-mobility, including technical skills, leadership, and administration. Equipped with training facilities and educational materials, the Hub's training programs aim to develop a skilled workforce capable of driving innovation and growth in the mobility industry.</p>
<p><b>Audience</b></p>	<p>Fleet operators and managers.</p>	<p>Businesses, government agencies, property developers, fleet operators, and EV owners.</p>	<p>Workforce in the mobility sector, including technicians, engineers, and managers.</p>
<p><b>Resources required</b></p>	<p>Fleet management platforms, telematics devices, and diagnostic equipment.</p>	<p>Skilled technicians and engineers with expertise in EV charging technology, access to a supply chain for charging equipment and materials.</p>	<p>Training facilities equipped with tools, simulators, and educational materials.</p>
<p><b>Value</b></p>	<p>Offers tools and technologies to optimize fleet operations, enhance efficiency, and reduce costs.</p>	<p>Provides a comprehensive model for EV charging infrastructure.</p>	<p>Offers specialized training programs to develop skills and knowledge in mobility, supporting workforce development and industry growth.</p>

# Emasa Mobility Hub - Resources and Future Plans

## **Initial investment**

The initial investment for the hub came from the parent company, Emasa. It was used for various purposes, including constructing specialized facilities, purchasing equipment, hiring staff, and developing training programs.

## **Revenue sources**

Key revenue sources include membership dues, grants, sponsorships, consulting fees, and sales of products and services (e.g., charging infrastructure/chargers/equipment for workshops). Membership dues vary based on the level of membership and the services included.

## **Key expenses**

Major expenses include facilities (e.g., rent, initial remodeling, maintenance), equipment (e.g., purchase, maintenance), staff salaries, training programs, and operational costs. The initial investment was used for significant expenses such as facility conditioning, equipment purchase, and staffing.

## **Future plans**

The Hub plans to consolidate and refine its services, focusing on the most valuable offerings and responding to the main needs of its clients. They aim to continue expanding their network, developing new business models and supporting startups through Emasa Ventures.



# Newlab

## Newlab

*Place-based approach to driving growth of deep tech startups and regional economic development through technology infrastructure, industry partnerships, and investment capital.*

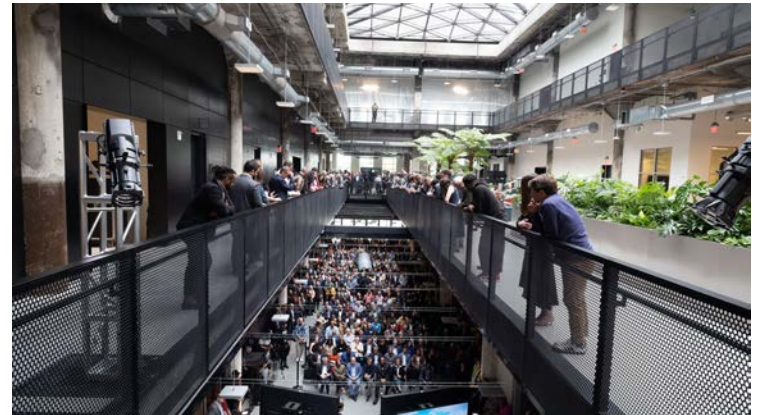
# Newlab - Overview

## Background

[Newlab](#) was established in Brooklyn, New York in 2016 with the goal of creating an environment that allows for deep tech startups (those providing technology based on substantial scientific or engineering advancements) to grow quickly. Newlab has a focus on place-based innovation to drive economic growth in the local region – with sector focus areas of energy, mobility, and materials. Over time they have developed an approach of integrating 1) infrastructure for development and testing of technology, 2) investment capital, and 3) industry partnerships. This is referred to as their “flywheel” approach. In 2023, Newlab brought its flywheel model to Detroit, Michigan, establishing a local campus. Newlab is also expanding and adapting its approach to new locations, for example in Uruguay and more. In this report we focus on the Detroit location.

## Key stakeholders

- State, local government agencies
- Local industry - established players
- Local entrepreneurs and startups
- Investors



# Newlab - Key Services

<p><b>Service</b></p>	<p><b>Infrastructure, including labs and access to sites for real-world testing and piloting</b> Access to state-of-the-art labs and facilities for prototyping and testing advanced technologies in areas such as AI, robotics, and clean energy, all supported by Newlab technicians.</p>	<p><b>Investments</b> Access to investment opportunities for member startups, from Newlab and from external investors.</p>	<p><b>Co-working and event space</b> Expansive collaborative workspaces for members and event space for members and the general public.</p>	<p><b>Strategic partnerships</b> Newlab facilitates strategic partnerships with industry leaders, academic institutions, and government agencies to drive innovation and growth.</p>
<p><b>Audience</b></p>	<p>Startups, researchers, and entrepreneurs looking to develop and test innovative technologies.</p>	<p>Startups seeking capital to fund their growth and development, and investors seeking new opportunities.</p>	<p>Startups, entrepreneurs, researchers, and larger companies/institutions.</p>	<p>Startups, entrepreneurs, and researchers seeking to collaborate with key established players in various sectors.</p>
<p><b>Resources required</b></p>	<p>Equipped labs with specialized equipment, materials, and technical expertise.</p>	<p>Access to investment capital, investment partners, and financial expertise.</p>	<p>Shared office space, event space, amenities, and networking opportunities.</p>	<p>Network and partnership engagement, and subject material expertise.</p>
<p><b>Value</b></p>	<p>Allows startups to prototype and test their technologies in a real-world environment, accelerating the development process and increasing the chances of success.</p>	<p>Newlab helps vet startups for investors and vice versa through their in-depth relationships with both types of actors.</p>	<p>Offers a collaborative environment where startups and other institutions can work alongside and host events with like-minded individuals, share ideas, and collaborate on projects, fostering innovation and growth.</p>	<p>Provides partners with innovative solutions to their challenges, and startups and innovators with applications for their ideas.</p>

# Newlab - Resources and Future Plans

## Initial investment

The size and nature of the initial investment is different for each of Newlab's locations. In Detroit, [Michigan Central](#) provided the majority of the funding to bring Newlab to Michigan, with the state government following on with additional funding for programming and other forms of activating the Newlab platform.

## Revenue sources

Newlab has a diversified revenue model. Members and startups pay fees at different levels depending on the type of organization and services used; government agencies and established industry players support Newlab's work to encourage early adopters of technology aligned with their goals; Newlab engages in partnerships to advance economic development goals in the region; Newlab also invests in equity positions in portfolio companies.

## Key expenses

The facilities are a key expense but expenses related to piloting infrastructure are kept low because access is provided through partnerships with infrastructure owners rather than Newlab owning and managing the infrastructure. As of early 2024, Newlab has approximately 60 staff, with a mix of global and local focus to their work. Newlab also works with local partners to fill gaps in talent rather than bringing on additional staff.

## Future plans

Newlab is in growth mode. It plans to establish new locations, targeting approximately 10 in total, a mix of large flagship locations and smaller hubs depending on the local context. In addition to refining its current programming, Newlab is also exploring how to support ventures in scaling up beyond the pilot phase.



## **Supercool Mobility Center**

***One-stop shop for sustainable mobility solutions with state-of-the-art local showrooms linked to global online marketplace.***



# Supercool - Overview

## Background

[Supercool Mobility Center \(Supercool\)](#) was inaugurated in 2023 by Citizens Companies, an energy trading company that has also launched EV, charging, and energy digitization companies. Supercool, with its first location in Puebla, Mexico, is intended as a platform to help sustainable mobility companies go to market and scale, connecting them with other businesses, governments, and other customers seeking their types of solutions. Puebla was selected as the first location in a planned global network due to its existing e-mobility ecosystem, including companies engaged in automotive manufacturing, assets such as physical infrastructure, government interest in testing sustainable mobility solutions, and existing relationships. Supercool plays the role of mobility solutions provider globally and offers market entry support for companies in the local ecosystem. As the Puebla location is most advanced, we will focus on that one in this report.

## Key stakeholders

- Sister companies also owned by Citizens (e.g. house brands such as charging infrastructure and EVs, which are Link EV, Qion, and XC Power)
- Member companies (all segments such as cars, trucks, bikes, scooters, motos, as well as charging infrastructure, solar power, and other)
- Customers for products sold on Supercool's platform: companies, government



# Supercool - Key Services

<b>Service</b>	<b>Local facilities and global marketplace</b> Supercool offers a host of services to enable its house brands and member companies to bring their solutions to market, such as a physical showroom, testing equipment, fulfillment, an online e-commerce platform, sales and after service support.	<b>Training &amp; education</b> Supercool runs trainings for users and customers of sustainable mobility solutions to promote adoption. They have in-person and online trainings and regularly host informational tours. There are also plans to develop more technical trainings for current students and industry professionals on e-mobility. These will be offered in all Supercool locations and online.
<b>Audience</b>	Member companies showcase and sell their products this way, companies/governments around the world are customers.	Potential customers, general public, current students and industry professionals.
<b>Resources required</b>	Physical location for showroom, equipment for testing and fulfillment, staff for sales and afterservice support, and e-commerce platform with inventory management system.	Trainers, space or online hosting.
<b>Value</b>	These services provide the highest value for Supercool members and are the core of Supercool's activities, helping to grow adoption of new mobility technologies.	Helps generate awareness about these topics, growing the potential customer and membership base and talent pipeline.

Supercool also makes its facilities available for hosting events, which is a paid service it provides to members and the general public.

# Supercool - Resources and Future Plans

## **Initial investment**

Citizens Companies provided the initial investment, including for the construction of the facility, equipment, and staff.

## **Revenue sources**

Supercool's key revenue sources are membership dues and commission on sales from member companies and in-house brands. It also charges a nominal amount for training programs. Members pay different dues depending on their product and Supercool receives different levels of commissions based on product type. Members can bundle the services they have access to and can pay extra for others. Future revenue sources include franchise fees (see below, future plans).

## **Key expenses**

Supercool's major expenses relate to operating its facility and staffing a team. In Puebla, Supercool has a lean team of approximately 7-10 people focused on management, marketing, and operations, as well as a sales team for each brand.

## **Future plans**

Supercool plans to expand its network globally, with several new locations in the works for Mexico, as well as in the US (starting with Boston, Massachusetts), Europe (starting with Modena, Italy), and others. Supercool plans to own and operate eight locations, and the rest would be operated under a franchise model.



## **uYilo E-Mobility Programme**

***Preparing South Africa's automotive industry – incumbents and new entrants – and workforce for transition to e-mobility through technical testing facilities, pilots, and trainings.***

# uYilo - Overview

## Background

[uYilo e-Mobility Programme](#) was launched in 2013 as an initiative of the national government under the Technology Innovation Agency, a public entity of South Africa's Department of Science and Innovation, to prepare the country for the transition to e-mobility. It is now housed within the Faculty of Engineering, the Built Environment and Technology at Nelson Mandela University in the Eastern Cape Province of South Africa. This province is an automotive hub, with many OEMs, component manufacturers, and tire companies located there. The national government and Eastern Cape provincial government continue to be the primary sources of funds for this hub, as its activities are connected to the region's broader decarbonization goals.

## Key stakeholders

- Nelson Mandela University
- National and provincial government
- Companies in automotive value chain
- International funders
- Entrepreneurs and startups



# uYilo - Key Services (1)

<p><b>Service</b></p>	<p><b>Smart grid ecosystem live testing environment</b> uYilo has DC and AC chargers supported by solar panels and energy storage through second life EV batteries, which is grid connected.</p>	<p><b>Battery testing and materials characterization</b> uYilo operates the only accredited lithium-ion facility in South Africa for performance testing. They also test lead-acid batteries and have labs to characterize materials.</p>	<p><b>E-mobility suppliers portal in South Africa</b> uYilo operates an online portal that connects EV OEMs, battery manufacturers, EV charging point equipment companies, EV charging point operators, mobility platform suppliers, engineering services companies, and more.</p>
<p><b>Audience</b></p>	<p>Automotive OEMs test vehicles with different chargers, charge point operators test their systems, and SMEs can test their products in this system.</p>	<p>Companies test their products and use uYilo facilities and expertise as an extension of their R&amp;D.</p>	<p>Company types listed above from all over the country.</p>
<p><b>Resources required</b></p>	<p>Chargers, batteries, grid connection, technical staff.</p>	<p>Specialized equipment, space, and technical staff.</p>	<p>Connections with companies along the EV value chain, online resources.</p>
<p><b>Value</b></p>	<p>The complementary elements and different technology types within this testing environment allow companies along different parts of the EV value chain to test their products This is the only such testing environment in the country that is open to all companies.</p>	<p>These services are a key source of revenue for uYilo and are in high demand among companies in the region.</p>	<p>The portal allows companies from around the country to connect with one another to sell their products, collaborate on developing new products or services, or expand their current offerings.</p>

## uYilo - Key Services (2)

<b>Service</b>	<b>Kick-start fund</b> Started in 2014, this fund supports applied research to accelerate commercial readiness of new technologies.	<b>Capacity building and demonstration sites</b> uYilo implements grant-funded programs from international organizations to support trainings, capacity building, and demonstration sites for e-mobility projects. Examples of such projects are <a href="#">Smart Energy Solutions for Africa (EU)</a> , <a href="#">Shifting the Transport Paradigm for South Africa (UK PACT)</a> , and serving as a demonstration/pilot site for e-bike sharing, electric micro-mobility, and eco tourism mobility projects. Also, see the <a href="#">EV training program: global review report</a> for more information on uYilo's training programs.
<b>Audience</b>	SMEs or universities anywhere in South Africa can apply.	Local, provincial, and national government officials for training and capacity building.
<b>Resources required</b>	Funding provided by South Africa Technology Innovation Agency, process managed by uYilo staff.	Funding from international organizations, staff expertise at uYilo.
<b>Value</b>	There is great demand from applicants for this kind of program, which provides gap funding between research and commercial scale.	Such projects build awareness and capacity locally to continue advancing e-mobility related efforts, and provide connections to international resources and networks.

# uYilo - Resources and Future Plans

## **Initial investment**

The South African national government provided an initial investment and Nelson Mandela University provided facilities and staff.

## **Revenue sources**

The primary revenue source continues to be government funding (national and provincial) on five-year cycles, as well as fees from companies and researchers for the use of services (primarily coming from battery testing and materials characterization). uYilo also receives grant funding from international organizations.

## **Key expenses**

The key ongoing expense is staff, as well as operation and maintenance of the facilities and equipment. Battery manufacturers provide in-kind support by donating battery testing equipment.

## **Future plans**

uYilo is expanding its training programs to new topics and audiences and seeks to diversify its partnerships to engage more users of their current services and offer new services in response to local demand.



# ANALYSIS



# Making sense of the different models

The mobility innovation hubs we examined are varied in their focus, offerings, and business models. To help make sense of what value they can create and for whom, what resources are needed, and what the challenges may be, we present key insights in this section. We highlight common vs. unique services offered, findings related to hub financials, and the roles they play in their respective ecosystems. By considering all of this, we can see how a hub can help their city or region make progress in mobility innovation.

Some of our analysis connects specific ideas to individual organizations and some intentionally does not; rather those parts are connected to insights and experiences shared by the mobility innovation hub leaders we interviewed.

# Common services across hubs

These services are currently offered and/or planned by multiple hubs. This is not an exhaustive list, but helps us visualize the most common and in-demand services.

Services offered						
Ramp-up manufacturing facilities and equipment	✓	✓	✓	✓	✓	
Co-working space for entrepreneurs and companies	✓		✓	✓	✓	
Training	✓	✓	✓	✓	✓	✓
Member and public events	✓	✓	✓	✓	✓	
Testing environments	✓	✓	✓	✓		✓
Consulting services, commercialization support	✓	✓	✓	✓	✓	✓
Sale of EV-related products such as chargers, vehicles			✓		✓	
Product showroom	✓		✓	✓	✓	

# Value proposition tailored to local context

Below we highlight services that are unique to certain hubs. Such services are one of the ways in which hubs can meet the needs and demand specific to their local context. They can also differentiate the hub and in that way create new value for the hub and the local ecosystem. This is not an exhaustive list but rather meant to highlight some unique features and services.



<b>Services</b>	Vehicle test track	VR cave	<ul style="list-style-type: none"> <li>- EV fleet management solutions</li> <li>- EV charging infrastructure</li> </ul>	Strategic partnerships with government and industry players	Online e-commerce platform for products	<ul style="list-style-type: none"> <li>- Battery testing and materials characterization facility</li> <li>- Providing grant funding for early-stage ideas</li> </ul>
<b>Value proposition</b>	Ability to test and showcase vehicles developed by local companies.	Ability to scale trainings and collaboration across geographies.	Helps grow the infrastructure necessary to promote e-mobility adoption and complements EV production activities.	Value to government actor or company in strategically scoping a call before seeing ideas/solutions.	Ability to connect Supercool's planned global network and help products achieve global reach.	<ul style="list-style-type: none"> <li>- Ability to meet key needs of local industry and research efforts.</li> <li>- Ability to support more ideas without taking equity.</li> </ul>

# Insights from hub financials



## Initial Investment

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- Can come from different players (e.g. government, companies, private investors) as each may have a different angle of interest in the hub (e.g. advancing local economic development goals, broader shared vision, etc.).
- The hubs featured in this report tend to have one or two primary initial investors.
- Sometimes investment from a non-local player with a shared vision can spur more local buy-in.
- Land and/or building space may be donated or loaned to help kick-start efforts.
- Equipment and technology may or may not be needed from the start, and these can be purchased or procured through other strategies.
- Employing a phased approach can help make progress toward an ambitious vision.



## Revenue Sources

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- Variety of potential revenue sources; most hubs diversify to hedge risk and maximize different opportunities.
- Potential sources include grants (especially for workforce development efforts), taking equity or sales commission with startups supported, selling own products/house brands, membership fees, and consulting fees.
- Many hubs have memberships in one form or another, though models differ and these are not necessarily key revenue sources.
- Event hosting is big source of revenue for some hubs, and generally adds value to all.



## Key Expenses

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- As physical infrastructure is an important feature of many of the hubs, operations and maintenance of space and equipment/technology is often a key expense.
- Most hubs examined have a lean staff, and sometimes rely on network of consultants or share staff with other organizations.

# How hubs can impact their ecosystem

Here we highlight how hubs featured in this report can support the ecosystem enablers of infrastructure, policy, and workforce, and examples of related services.



## Infrastructure

- Provides space and equipment to advance commercialization and education
- Convenes different types of players to strengthen networks
- Provides technical testing facilities, sites for pilot initiatives



## Policy Framework

- Can help shape and advance goals of national and local policymakers
- Improves private-public sector collaboration through engagement with government and companies



## Workforce

- Helps upskill and reskill local talent and builds talent pipeline
- Helps attract and retain companies to area, with ready workforce as key value add

### How hubs support each ecosystem enabler

### Examples of relevant services offered by one or more hubs

- Ramp-up manufacturing facilities and equipment
- Co-working space
- Product showrooms
- Testing environments
- Event hosting and space for rent
- Providing funding
- Producing infrastructure products such as charging stations

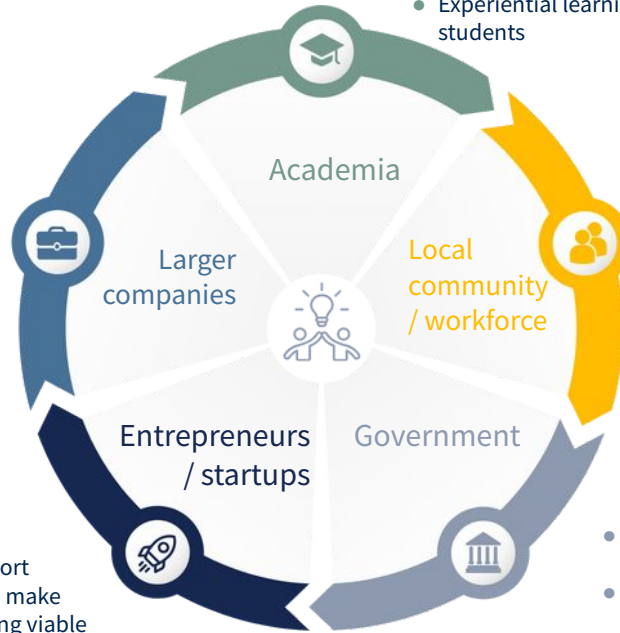
- Connections to regional economic development actors
- Connecting policymakers and regulatory agencies with companies
- Launching challenges or competitions with government agencies for startups and others to create innovative solutions

- Various types of trainings for different audiences

# Hub value propositions for different actors in the ecosystem

- Access to innovation from startups and others
- Access to policymakers to align companies and regulations
- Talent solutions (reskilling, upskilling, pipeline)
- Opportunities for visibility and learning

- Commercialization support
- Space and equipment to make small-scale manufacturing viable
- Access to funding, investors
- Access to networks: customers, investors, partners, new talent



- Partnership opportunities for faculty research and teaching opportunities for faculty
- Experiential learning and research opportunities for students

- Training and professional development opportunities in emerging areas, sometimes aligned with national or professional certification standards
- Employment opportunities through the attraction or retention of companies

- Advancement of goals related to economic development (talent, businesses, value created)
- Opportunity to advance policies related to sustainability, decarbonization, and more
- Opportunity to work with companies and other actors to advance policy

# TAKEAWAYS





## Applying findings to different contexts

A key goal of this report is to make the findings actionable for stakeholders around the world interested in establishing new mobility innovation hubs or bringing related activities and benefits to their contexts. In a different version of this report we presented takeaways specific to Chihuahua, which included connecting insights regarding the value propositions of mobility innovation hubs to the needs, gaps, and assets of the Chihuahua local context.

In the following slides we share more general takeaways and recommendations for how to apply insights to your local context, considering the needs of the local ecosystem, as well as existing assets and gaps.

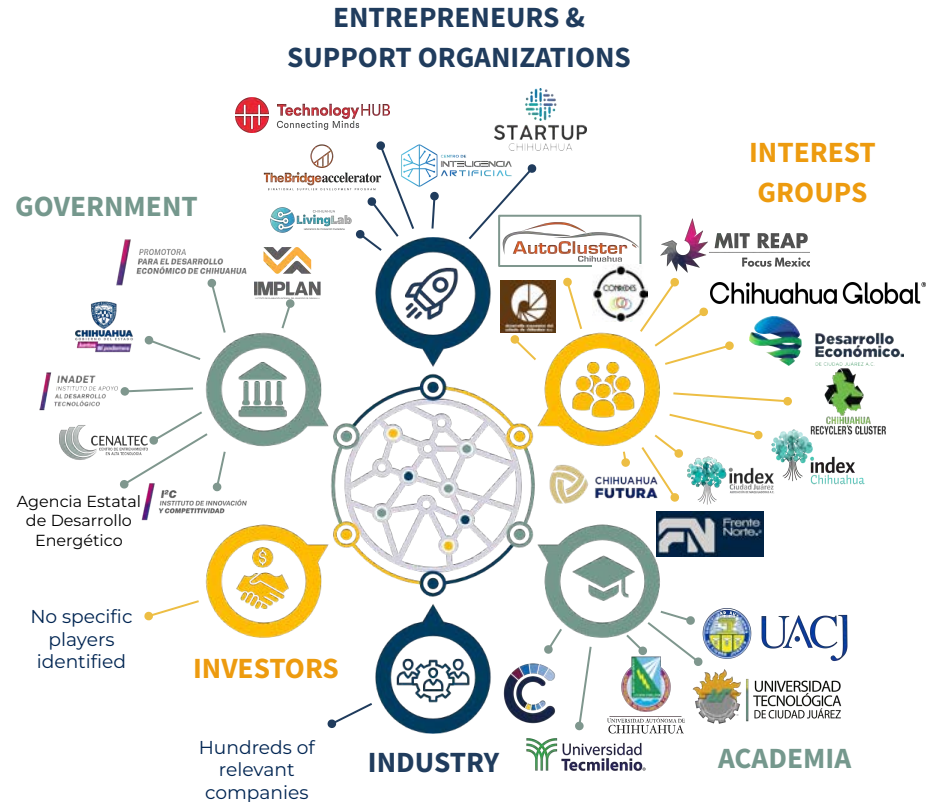
Note that our recommendations are not necessarily intended to enable the creation of a new hub entity, but rather to focus on the value that could be created by a single organization or multiple complementary organizations, whether they already exist or not.

# Consider the local ecosystem related to e-mobility

Consider the varied actors that are connected in different ways can advance goals related to e-mobility.

The visual to the right was created in 2022 as part of WDI's ecosystem mapping effort in the state of Chihuahua and is meant to be representative, not exhaustive.

Such an ecosystem mapping effort can help identify, engage, and communicate with different players in an ecosystem.



# Consider local ecosystem assets and gaps

Once players and connections are identified in an ecosystem, mapping the assets and gaps can be helpful to understand what exists already and can be leveraged, and what is lacking and should be addressed. Such an exercise could be done through the lens of ecosystem enablers discussed earlier in this report: infrastructure, policy framework, and workforce. Below we present an example framework that may be helpful to identify and prioritize specific services that can support e-mobility based on the specific characteristics of a local context, for example:



**Infrastructure**



**Policy Framework**



**Workforce**

<b>Service</b>	E.g. providing funding, digital platform, etc.	E.g. updating policy, public-private partnerships, etc.	E.g. training programs and resources, etc.
<b>Gap to address</b>			
<b>Asset or resource to leverage</b>			

# Actions that existing players can take to support their local ecosystem for e-mobility

- Have interested organizations (tech-focused organizations and centers, industry clusters and associations, etc.) adopt a more explicit and visible (not necessarily exclusive) focus on e-mobility. This focus can be applied to existing programs/activities or form the impetus for new ones.
- Empower an organization to take on the role of ecosystem orchestrator, to bring together disconnected efforts and players, and help prioritize areas of greatest need and potential.
- Create effective and consistent mechanisms for sharing information and collaborating between different players.
- Identify interested stakeholders in different locations, that could be involved in e-mobility activities. This will help grow a critical mass needed to support the transition and ensure that it is cohesive.

## Considerations for establishing a new hub

The previous considerations are focused on services that could be offered and actions that could be taken by existing organizations in any context to enable innovation related to e-mobility. Here we share key takeaways for determining a value proposition and services to be offered if there is interest now or in the future in creating a new hub entity focused on mobility innovation.

These are based on our examination of the six featured mobility innovation hubs and broader research on the e-mobility transition we have conducted to date.

# How to determine a value proposition and services for a new hub?

## Value proposition

- It is important to offer a clear value proposition and one that fits the needs of the local context.
- Focus: don't try to be everything to everyone, or do too many things at once.
- Local focus/global reach: there is value in being part of a global network, whether you create one or join an existing one. Different locations can share core mission and certain features while customizing value proposition, services and business model to each local context.
- Seek complementarity in focus areas: within mobility, a hub can focus on multiple areas and there may be benefits to doing so (i.e. production and adoption, ACES, different vehicle segments, and different parts of the EV value chain).

## Services

- Infrastructure and space are important for many services but also expensive; start with what is absolutely necessary and then consider how to scale. Also seek to leverage existing infrastructure.
- Seek ways for services to integrate/complement one another: for example, connect workforce development with commercialization support so companies can inform trainings and then have ready talent pipeline locally.

## How to position a new hub in a local ecosystem?

- Create strong alignment and relationships within local ecosystem before seeking to expand vision, partnerships and operations in other locations.
- Consider what value could be provided to all different actors in the ecosystem, not just one type of actor. There is value for a hub and for actors in working across the ecosystem, even if the hub engages with new actors in a phased way.
- Adopt a collaborative rather than competitive mindset. Though resources are often limited, there are still relatively few players in this emerging space, and plenty of room for and mutual benefits to be had by complementing one another rather than directly competing.
- Hub model can be designed to be replicable or hyper local. Either way it should be adapted to the local context(s).
- Leverage, rather than duplicate, what is already happening locally in this space. Assigning/creating an ecosystem orchestrator can be of great value to promote more information sharing, design mutually beneficial partnerships and prioritize specific collective actions.

# Looking ahead for mobility innovation

There is increasing momentum related to mobility innovation around the world. Awareness about both the opportunities and challenges that this transition brings has grown significantly over the past couple of years, and key players are eager to implement concrete initiatives to advance e-mobility.

A mobility innovation hub can provide many different services and play various roles, and it is crucial to identify what is most needed in a specific context to define a strategic goal and energize different stakeholders.

As different actors seek to support mobility innovation in new ways, we hope the examples, insights and takeaways included in this report will serve as valuable market research for those interested in understanding and evaluating the types of benefits and costs associated with different models and strategies to advance mobility innovation.



# APPENDIX

The image features a white background on the left side where the word 'APPENDIX' is written in a bold, dark blue, sans-serif font. The right side of the image is dominated by a complex graphic design. It consists of several thick, yellow diagonal lines that intersect to form a large, stylized 'X' or 'K' shape. The background behind these lines is a blurred, dark blue and teal image that appears to be a close-up of a circuit board or a data visualization, with glowing lines and patterns. The overall aesthetic is modern and technological.

# Methodology

For this report, WDI defined the scope in collaboration with partners in Chihuahua. We then created a framework for hub inclusion and analysis, and identified mobility innovation hubs around the world through desk research and our networks. The hubs featured in this report were selected out of a larger group based on their stage of development, business model and geographic diversity, and availability of information. While this report includes hubs from around the world it is not intended to be exhaustive, and we acknowledge that many new hubs are being created and existing hubs are being expanded in this rapidly moving space. There are also similar types of hubs that focus on topics related or adjacent to mobility that were not included.

To develop the report we gathered information via desk research and then conducted key informant interviews with individuals noted on the following slide to learn more about each hub and gather insights. The WDI team then analyzed all data and shared with key experts to review and provide their input.

WDI also identified individuals in the innovation ecosystem in Chihuahua and organized an in-person focus group in Chihuahua in March 2024, to gather reactions and insights from participants to inform the key takeaways that the WDI team put together for Chihuahua in another version of this report.

In parallel, WDI developed a similar report on [EV training programs around the world](#). As some of the organizations offering training are featured in both reports, some of the desk research and key informant interviews are related.

# List of interviewees and contributors

The authors would like to extend our sincerest gratitude to the following individuals for generously sharing their time and valuable insights to inform this report.

<b>Mobility innovation hub interviewees</b>	<b>Chihuahua focus group participants</b>
<ul style="list-style-type: none"><li>● Alberto Arroyo, Supercool Mobility Center</li><li>● Rafal Bulgarski, Automobility Enterprises</li><li>● Daniel Cocay, Supercool Mobility Center</li><li>● Ana Cordero, Supercool Mobility Center</li><li>● Edward Dawson, Invest WindsorEssex</li><li>● Edem Foli, uYilo</li><li>● Satish Rao, Newlab</li><li>● Rodrigo Salcedo Campino, Emasa Mobility Hub</li><li>● Orville Thomas, California Mobility Center</li></ul>	<ul style="list-style-type: none"><li>● Orlando Daniel, Frente Norte</li><li>● Sorely Falomir, Universidad Autónoma de Chihuahua</li><li>● José Ibañez, Aspen Network of Development Entrepreneurs</li><li>● Fernando Ledezma, Universidad Autónoma de Chihuahua</li><li>● José Mireles, IA Center</li><li>● Abril Rangel, Startup Chihuahua</li><li>● Karen Thomas, Chihuahua Autocluster</li></ul>



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