



# INTELLIGENTLY ELECTRIFYING THE PLANET | 2023 Q1 UPDATE

NUVVE.COM



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# COMPANY OVERVIEW



# NUVVE SITS AT THE INTERSECTION OF TRANSPORT & ENERGY

We are introducing a new model for electrification through our intelligent energy platform by increasing the utilization of electric vehicles (EVs) and turning them into valuable earning assets, thereby reducing their total cost of ownership (TCO). This helps the grid become more resilient while accelerating the world's transition to clean energy.



## OUR PURPOSE

To intelligently electrify the planet, beginning with transportation.

## OUR VISION

Intelligently connecting the world's batteries so everyone has an opportunity to share in the benefits of an electrified world.

## WHAT WE DO

Combining the world's most advanced vehicle-to-grid (V2G) technology and our ecosystem of partners, we dynamically manage power among EV batteries and the grid.



# THE NUVVE V2G PROMISE



Drivers always have enough energy to drive



Customers enjoy cost savings and revenue generation opportunities



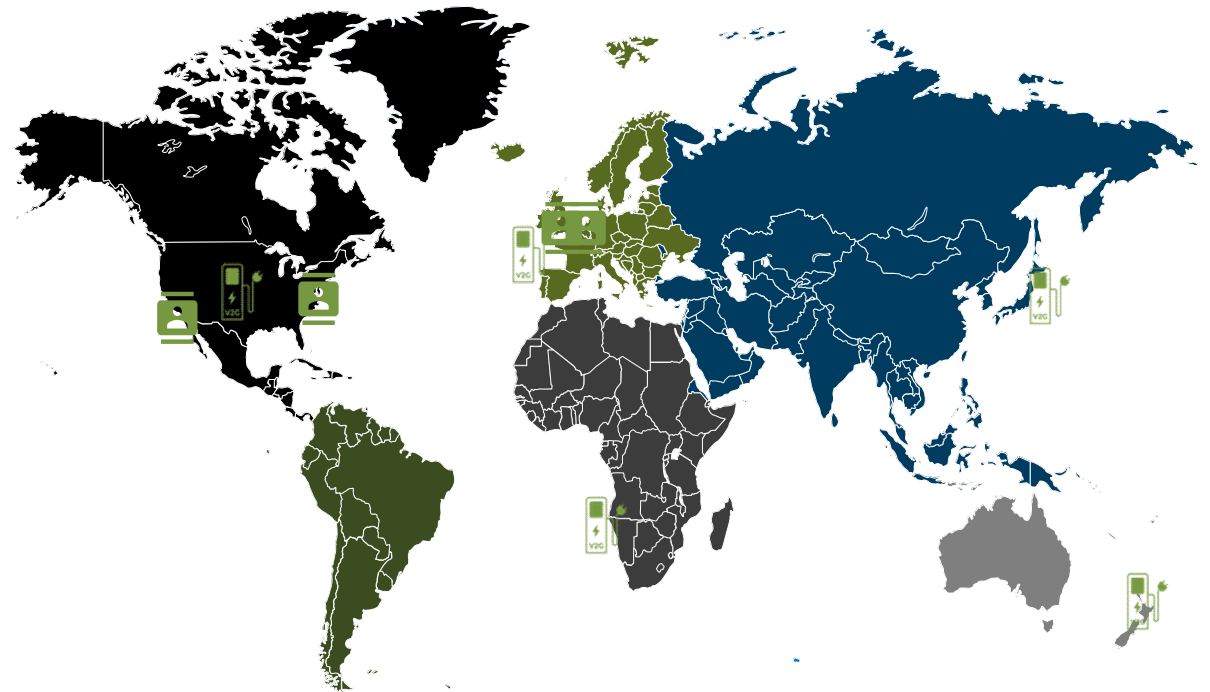
We work within OEM battery warranty limits



NUVVE

# OUR GLOBAL FOOTPRINT

- Headquarters in San Diego, CA
- Offices in Newark (Delaware), London, UK, and Copenhagen, Denmark
- 55+ employees and growing
- 25+ years of V2G R&D
- 18+ MW under management across the world
- 6+ years of continuous V2G commercial operations in Denmark







# LEADERSHIP TEAM



**Gregory Poilasne**

Co-Founder,  
Chairman & CEO



**Ted Smith**

Chief Operating Officer



**David Robson**

Chief Financial Officer

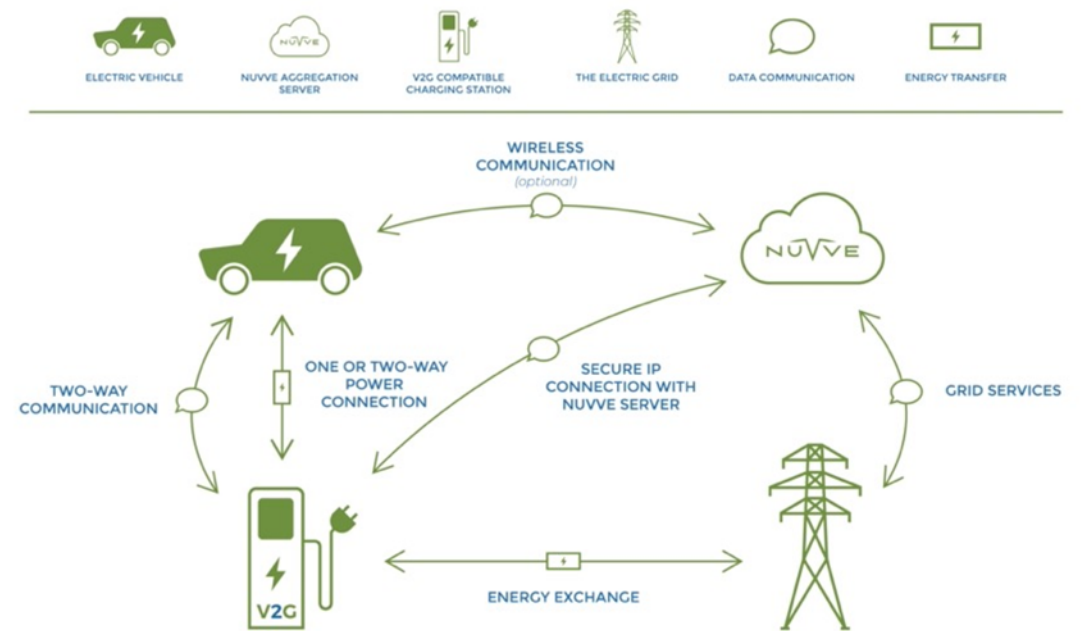


# V2G MARKET LANDSCAPE



# WHAT IS VEHICLE-TO-GRID (V2G)?

- Allows EVs to serve as distributed energy resources (DERs) by enabling EVs to charge *and* discharge energy from their batteries
- Stored energy from EV batteries is then used to add capacity to the grid and/or perform services that help stabilize the grid and prevent blackouts



\*In markets where this is allowed/applicable

# EV & POWER DEMAND FORECAST

## Explosive growth:

- By 2040, an estimated 550 million EVs will be on the road
- Globally, EVs will represent more than two-thirds of passenger vehicle sales by 2040

## Increased power demand:

- By 2040, EVs are projected to make up 10% of total electricity demand in the U.S. and Europe

Figure 3: Electric vehicle fleet forecast by vehicle type, base-case

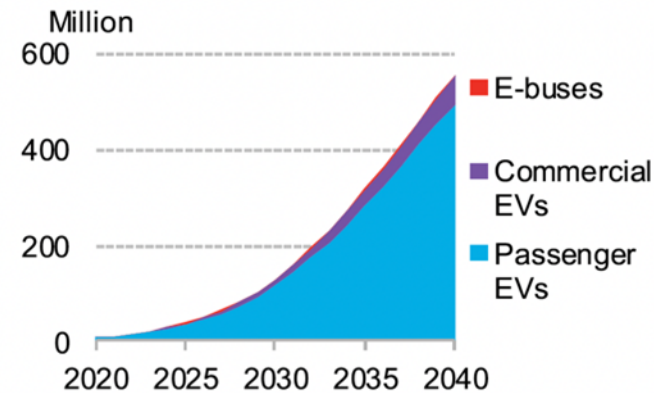
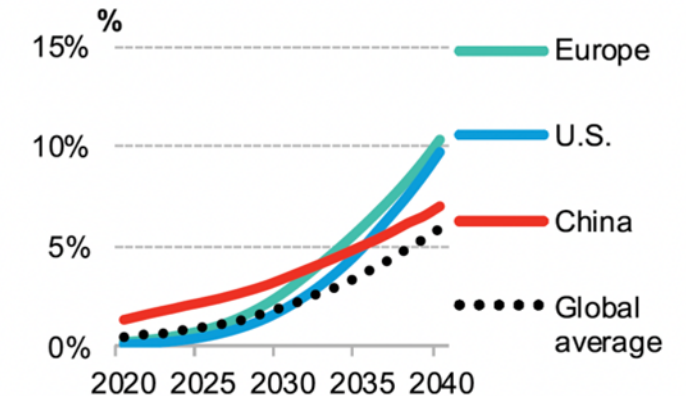


Figure 4: Electric vehicle electricity demand as a percentage of total electricity demand



Source: BloombergNEF Note: Analysis from BNEF's Electric Vehicle Outlook. The EV fleet represents 29% of all vehicles on the road in 2040. Commercial EVs includes vans and trucks.

**V2G helps solve the grid issues  
EV growth creates**

# NUVVE'S V2G SOLVES HIGH-LEVEL ISSUES & CREATES VALUE ACROSS THE ECOSYSTEM



REDUCES RELIANCE ON FOSSIL-FUELED POWER



INCREASES GRID STABILITY



ACCELERATES THE ADOPTION OF EVs

NUVVE

PAVES THE PATH TO A SUSTAINABLE FUTURE

CONNECTS THE ENERGY ECOSYSTEM

LOWERS THE TOTAL COST OF OWNERSHIP

# KEY INVESTMENT CONSIDERATIONS



# FIRST MOVER ADVANTAGE



**IP:** key patents and 25+ years R&D

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**TSO Qualification:** Qualified by multiple TSOs around the world, making it easier to expand

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**Data:** Years of data accumulation allows Nuvve to move rapidly and accurately for future developments

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**V2G Experience:** 10+ years of energy market participation; experience with multiple auto OEMs, charging station manufacturers, and utilities

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**Financing:** Custom, turnkey electrification solution with 100% financing options through joint venture, Levo, with \$750M in committed capital



# SCHOOL BUSES ARE THE IDEAL USE CASE FOR V2G

- Largest fleet in the U.S.
- Consistent route-based transport with known energy needs
- Parked and unused most of the time
- 95%+ are diesel today – bad for student, driver, and community health
- Reduction of ~88mm tons of carbon emissions with the electrification of the entire U.S. school bus fleet – equivalent to planting ~108 million acres of trees

Source: EPA. (1) Assumes 12-year asset life.

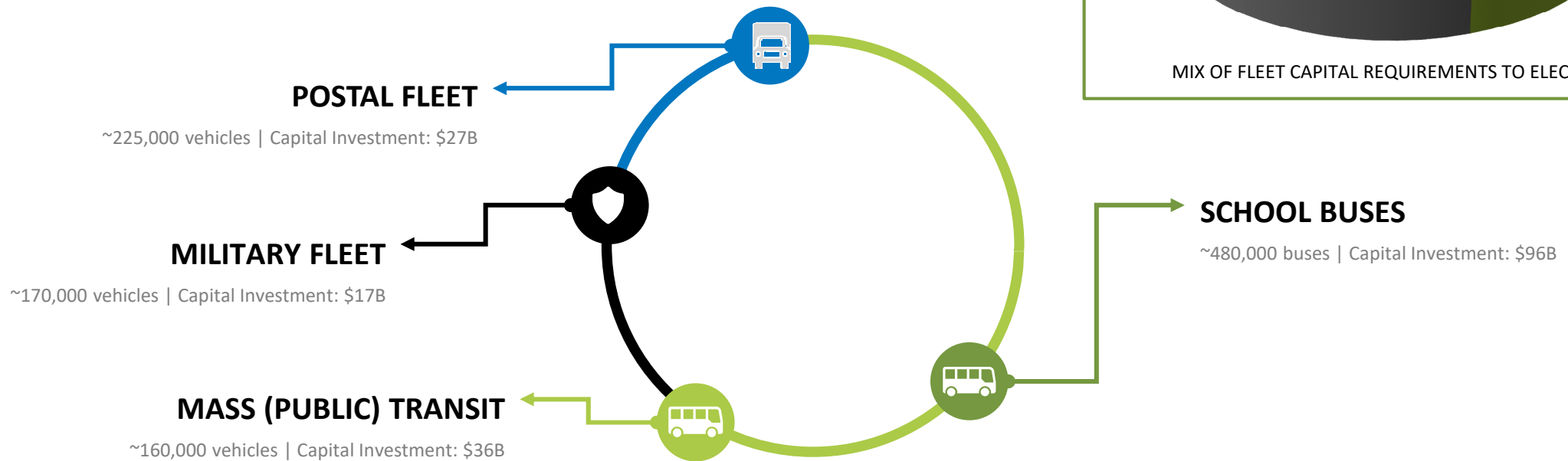
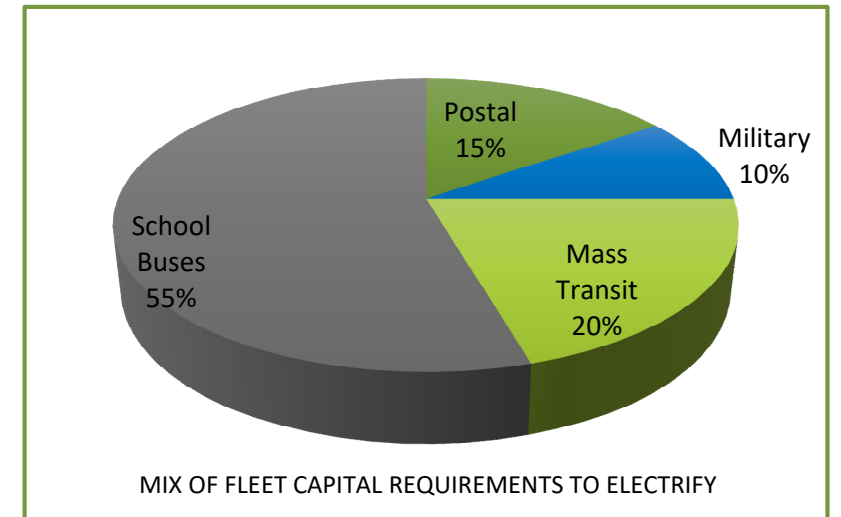
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# U.S. FLEET ELECTRIFICATION CAPITAL NEEDS


- Fleet Electrification Capital Requirements: ~\$176B+
- Passenger Vehicle Electrification Capital Requirements: ~\$6.4T



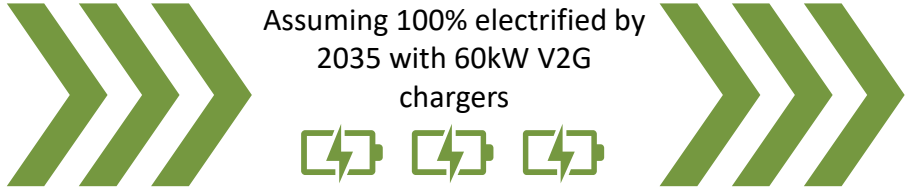
Sources: New York School Bus Contractors Association, U.S. Postal Service, American Public Transit Association, other public records. TAM figures assume an average approximate cost per electric vehicle type.

# MARKET OPPORTUNITY: U.S. SCHOOL BUSES

Yellow School Buses in the US<sup>(1)</sup>




**480,000**



Electric School Bus Power Capacity

**~29 GW**



Less than 1% are electric today

100% electrification of school buses could increase U.S. electric power generation capacity by nearly 3%<sup>(2)</sup>

*Assuming all electric buses are powered by Nuvve's proprietary V2G*



**29 GW**


Assumed Monthly Value of Energy Storage <sup>(3)</sup>	Storage Annual Revenue
\$120 / kW-year	<b>\$3.5B</b>
\$240 / kW-year	<b>\$6.9B</b>

Nuvve's experience and intellectual property make us uniquely qualified to capture this massive market opportunity

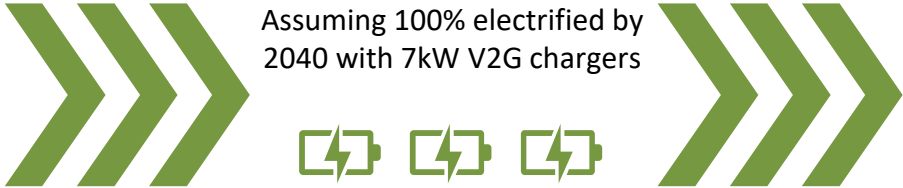
(1) Source: World Resources Institute. (2) Source: EIA; US power generation capacity as of the end of 2020. (3) Assumed value based on company estimates.



# MARKET OPPORTUNITY: PASSENGER VEHICLES

Global Electric Vehicles<sup>(1)</sup> 

**500M by 2040**



Assuming 100% electrified by 2040 with 7kW V2G chargers

Global Electric Vehicle Power Capacity

**~3500 GW**

100% electrification of school buses could increase U.S. electric power generation capacity by nearly 3%<sup>(2)</sup>

*Assuming all electric buses are powered by Nuvve's proprietary V2G*

V2G  
POWERED BY  
NUVVE

**3,500  
GW**

Assumed Monthly Value of Energy Storage <sup>(3)</sup>	Storage Annual Revenue
\$120 / kW-year	\$420B
\$240 / kW-year	\$840B

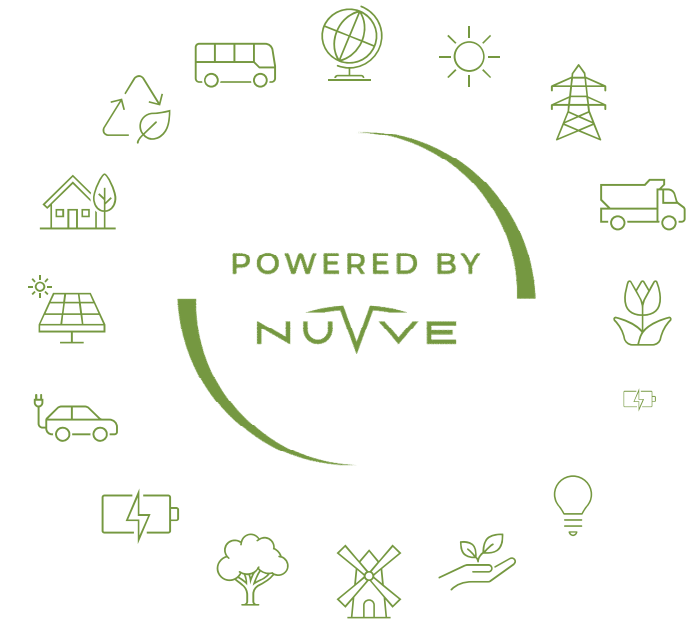
(1) Source: BloombergNEF Long Term Electric Vehicle Outlook 2020; Estimated number of electric passenger vehicles. (2) Source: EIA; US power generation capacity as of the end of 2020. (3) Assumed value based on company estimates.



# ESG: THE MULTIPLIER EFFECT

*Environmental, Social, Governance*

- Developing solutions for a scalable and sustainable green society
- Enables increased penetration of renewables
- Increases grid resiliency and reduces need for costly grid upgrades to integrate EVs
- Creates “energy equity” – increasing capacity for grid benefits for everyone
- Committed to increasing diversity and inclusion of team
- Working with schools in disadvantaged communities



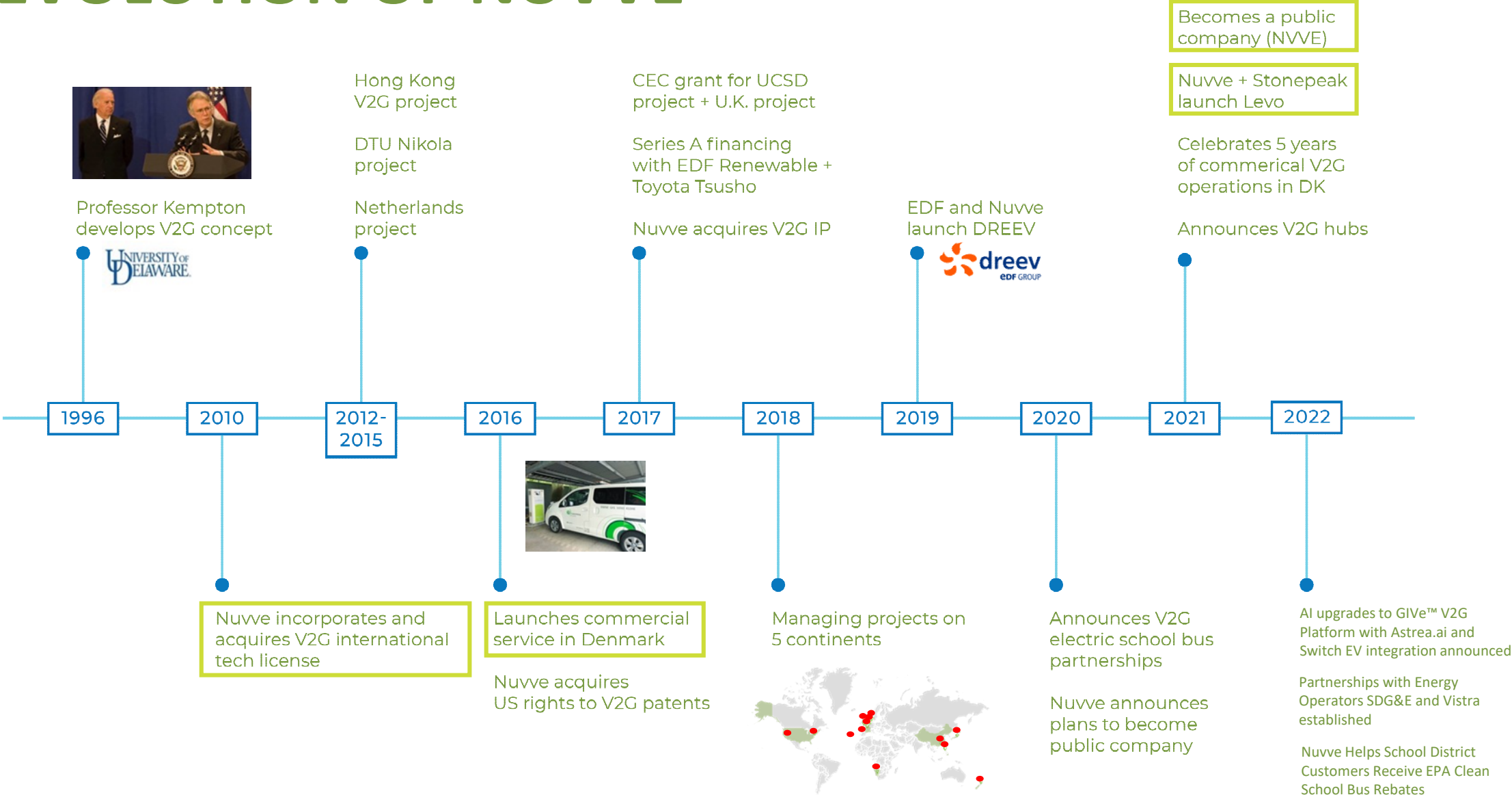
**ESG leaders have enhanced access to funds and margins**

**NUVE**

# BUSINESS OVERVIEW



# EVOLUTION OF NUVVE



# THE POWER OF NUVVE'S INTELLIGENT ENERGY PLATFORM



INCREASES THE UTILIZATION OF EVs



TRANSFORMS EVs INTO VALUABLE EARNING ASSETS



CONTRIBUTES TO A MORE RESILIENT GRID



INTEGRATES RENEWABLE ENERGY IN A MORE RELIABLE WAY



**REDUCES TCO**

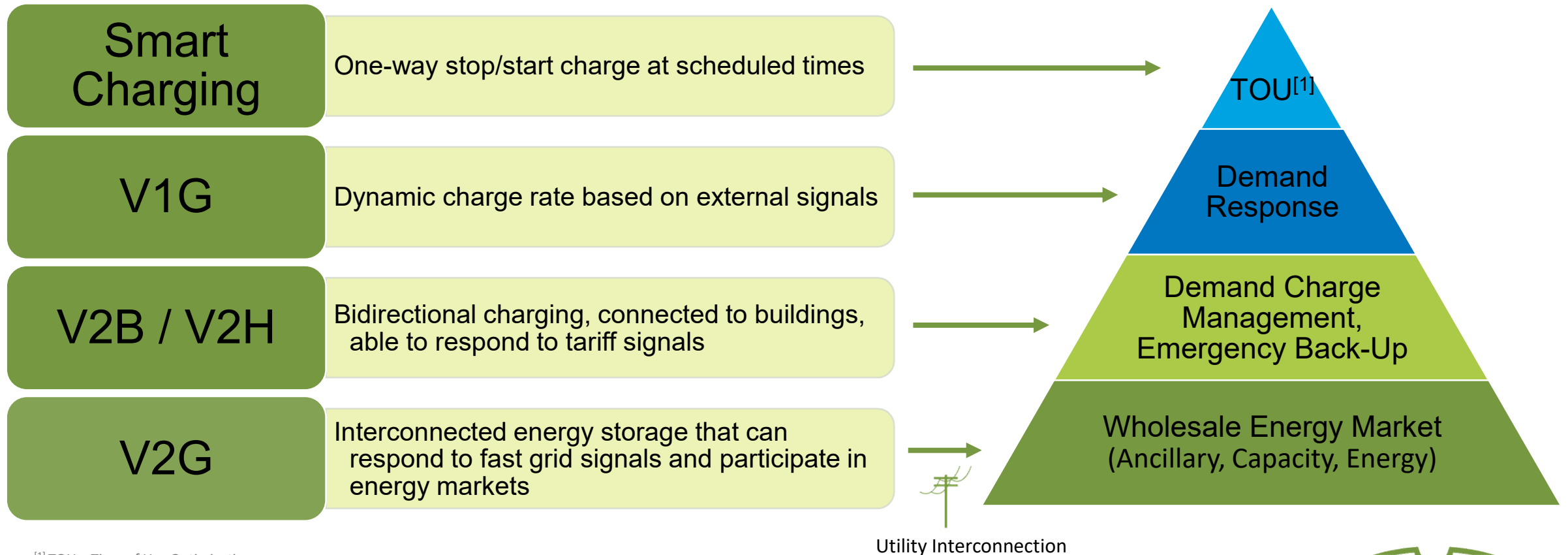


**CREATES ENERGY EQUITY**



# SAVING & REVENUE OPPORTUNITIES

Nuvve is capable of providing all levels of Vehicle Grid Integration, including V2G, providing revenues from grid services and utility bill savings behind the meter.

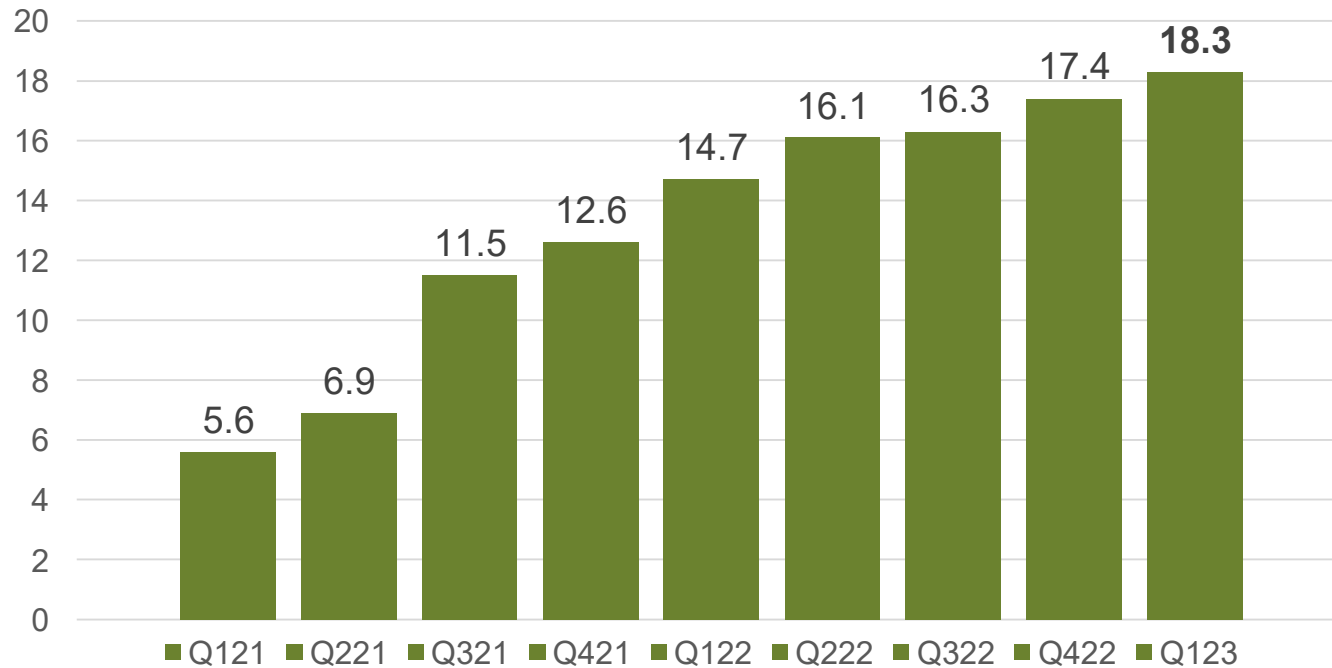


<sup>[1]</sup> TOU = Time of Use Optimization



# COMPANY GROWTH TREND

MW Under Management\*



Megawatts under management grew 5% in 2023 Q1 compared to 2022 Q4 and 24% from 2022 Q1

*\*Megawatts under management refers to the potential available charging capacity Nuvve is currently managing around the world*



# COMPETITIVE LANDSCAPE



		NUVVE	-chargepoint+	THE MOBILITY HOUSE	enel x	Shell	dvc energy	FERMATA ENERGY	HIGHLAND ELECTRIC TRANSPORTATION
<b>Transportation</b>	Fleet Charge	✓	✓	✓	✓	✓		✓	✓
	TOU	✓	✓	✓	✓	✓	✓	✓	
<b>Behind-The-Meter</b>	Demand Charge	✓	✓	✓	✓	✓	✓	✓	✓
	V2H	✓							
<b>Grid Services</b>	Demand Response	✓	✓	✓	✓	✓		✓	
	Voltage Control	✓							
	Reactive Power	✓							
	Energy Arbitrage	✓		✓					
	Frequency Regulation	✓							
	Bidirectional	✓	✓	✓			✓	✓	✓
			✓						

Note: Competitor services as advertised or promoted through press

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# REVENUE STREAMS



## Charging Station Hardware

- White labeled from EVSE partners integrated with Nuvve software



## Grid Services Revenue

- Agreements with customers and/or directly with utilities for % share of revenue earned through grid services



## Fleet-as-a-Service

- All-in-one electrification solution for a flat monthly fee



# EXPANDING OUR PARTNERSHIPS



- OEM integration; all Blue Bird electric buses come standard with Nuvve V2G
- OEM partner for Levo to offer as leasing option to school districts



- OEM integration underway to be used across vehicle types – transit buses and coaches, yard tractors, drayage and refuse trucks, last mile delivery vehicles, and school buses.



- Formed joint venture, “Astrea AI” to integrate AI to Nuvve’s platform to broaden and optimize services offered today



- Combine battery storage, solar, and smart EV charging into a comprehensive home energy system for residential and commercial markets



- Adds Nuvve’s patented V2G platform to Switch’s standardized software solution for EVSE management, operations and maintenance, improving interoperability among charging stations, EVs and the grid

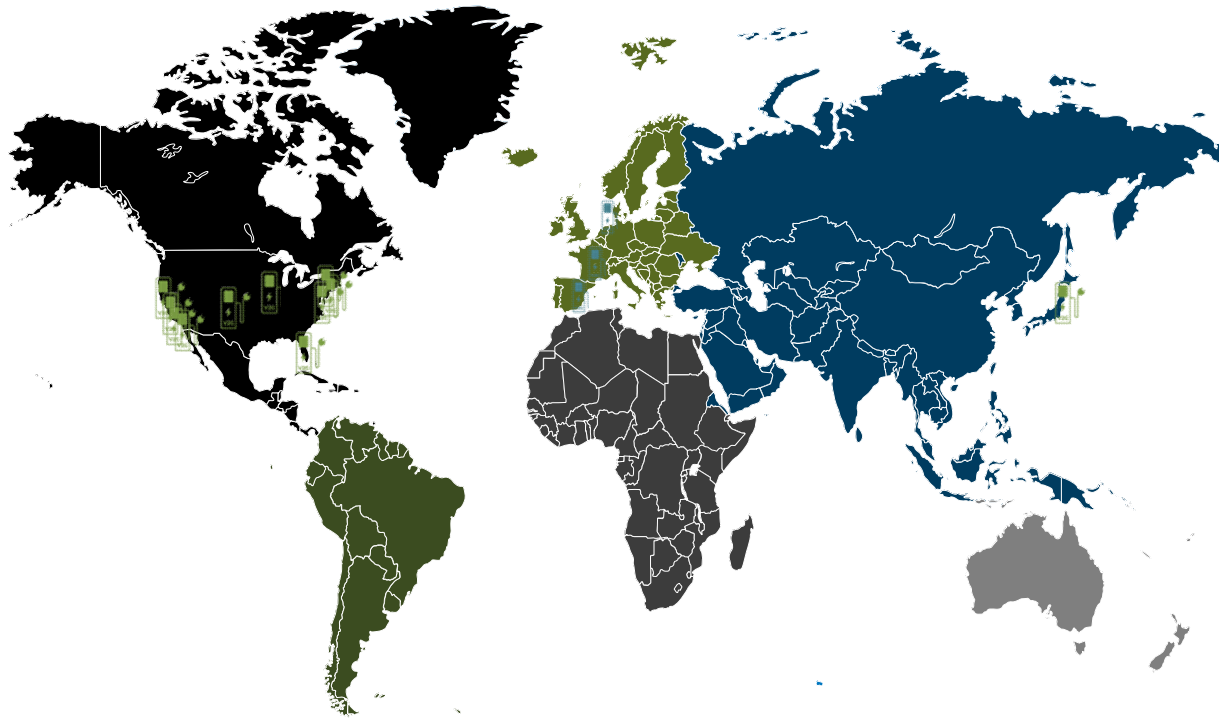


- Nuvve and Circle K deploy large-scale grid services to manage an initial 40 megawatts of EV fast charging and stationary storage capacity across Norway and Denmark

# UTILITY & ENERGY PARTNERS AROUND THE WORLD

## United States:

- PGE
- PG&E
- SCE
- SDG&E
- La Plata Energy Association
- Ameren
- New Hampshire Electric Co-Op
- Con Edison
- FPL
- Vistra



## Europe:

- GALP
- EDF
- Energinet

## Asia:

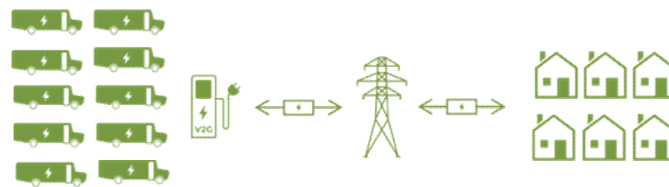
- Chubu Electric Power

# V2G HUBS: TURNING EVs INTO POWER PLANTS

- Nuvve's platform aggregates energy and power capacity from multiple EV batteries to form a virtual power plant (VPP)
- The VPP can provide services to the grid that add capacity, help stabilize it, and prevents blackouts

## The Power of V2G Hubs:

- If you have 200 buses connected at 125kW = 25MW of capacity
- 25MW would be capable of reducing peak consumption of 10,000 homes by 50%



# FLEET-AS-A-SERVICE FROM LEVO

- Levo combines Nuvve's V2G technology and energy management expertise with Stonepeak's capital (up to \$750M committed to Levo) and sustainable infrastructure experience
- Offers an all-in-one solution including the EVs, associated charging infrastructure plus site upgrades, and intelligent energy management
- 100% financing, no upfront costs, fixed monthly fee



# 2023 Q1 FINANICALS & UPDATES





# CONDENSED CONSOLIDATED BALANCE SHEETS

(unaudited)

	March 31, 2023	December 31, 2022
<b>Assets</b>		
Current assets		
Cash	\$ 11,846,458	\$ 15,753,896
Restricted cash	480,000	480,000
Accounts receivable, net	2,550,890	1,121,694
Inventories	10,032,242	11,551,831
Prepaid expenses	1,328,189	1,487,582
Other current assets	1,959,286	1,454,563
<b>Total Current Assets</b>	<b>28,197,065</b>	<b>31,849,566</b>
Property and equipment, net	607,504	636,944
Intangible assets, net	1,306,781	1,341,640
Investment in equity securities	670,951	1,670,951
Investment in leases	95,250	97,054
Right-of-use operating lease assets	5,192,320	5,305,881
Financing receivables	288,872	288,872
Security deposit, long-term	8,682	8,682
<b>Total Assets</b>	<b>\$ 36,367,425</b>	<b>\$ 41,199,590</b>
<b>Liabilities, Mezzanine Equity and Stockholders' Equity</b>		
Current Liabilities		
Accounts payable	\$ 2,363,548	\$ 2,390,422
Accrued expenses	4,329,062	3,347,399
Deferred revenue	1,183,092	1,221,497
Operating lease liabilities - current	850,821	824,326
Other liabilities	108,096	113,844
<b>Total Current Liabilities</b>	<b>8,834,619</b>	<b>7,897,488</b>
Operating lease liabilities - noncurrent	4,979,748	5,090,170
Warrants liability	434,642	220,884
Derivative liability - non-controlling redeemable preferred shares	436,065	359,225
Other long-term liabilities	469,190	393,179
<b>Total Liabilities</b>	<b>15,154,264</b>	<b>13,960,946</b>
Commitments and Contingencies		
Mezzanine equity		
Redeemable non-controlling interests, preferred shares, zero par value, 1,000,000 shares authorized, 3,138 shares issued and outstanding at March 31, 2023 and December 31, 2022; aggregate liquidation preference of \$3,533,898 and \$3,464,606 at March 31, 2023 and December 31, 2022, respectively	3,709,231	3,547,765
Class D Incentive units, zero par value, 1,000,000 units authorized; 50,000 and 250,000 units issued and outstanding at March 31, 2023 and December 31, 2022, respectively	119,559	445,479
Stockholders' Equity		
Preferred stock, \$0.0001 par value, 1,000,000 shares authorized; zero shares issued and outstanding at March 31, 2023 and December 31, 2022, respectively	—	—
Common stock, \$0.0001 par value, 100,000,000 shares authorized; 24,984,404 and 24,272,150 shares issued and outstanding at March 31, 2023 and December 31, 2022, respectively	2,498	2,427
Additional paid-in capital	146,094,334	144,073,505
Accumulated other comprehensive income	85,116	76,182
Accumulated deficit	(124,622,921)	(116,956,528)
Nuvve Holding Corp. Stockholders' Equity	21,559,027	27,195,586
Non-controlling interests	(4,174,656)	(3,950,186)
<b>Total Stockholders' Equity</b>	<b>17,384,371</b>	<b>23,245,400</b>
<b>Total Liabilities, Mezzanine Equity and Stockholders' Equity</b>	<b>\$ 36,367,425</b>	<b>\$ 41,199,590</b>

# CONDENSED CONSOLIDATED STATEMENT OF OPERATIONS

(unaudited)

	Three Months Ended March 31,	
	2023	2022
Revenue		
Products and services	\$ 1,780,385	\$ 2,253,784
Grants	74,401	117,249
Total revenue	1,854,786	2,371,033
Operating expenses		
Cost of product and service revenue	1,460,904	2,142,312
Selling, general, and administrative	6,172,024	7,625,550
Research and development	2,100,088	2,135,575
Total operating expenses	9,733,016	11,903,437
Operating loss	(7,878,230)	(9,532,404)
Other income (expense)		
Interest income	68,337	1,458
Change in fair value of warrants liability	(213,758)	4,776,000
Change in fair value of derivative liability	(76,840)	53,472
Other, net	440,386	(29,787)
Total other income, net	218,125	4,801,143
Loss before taxes	(7,660,105)	(4,731,261)
Income tax expense	—	—
Net loss	\$ (7,660,105)	\$ (4,731,261)
Less: Net income (loss) attributable to non-controlling interests	6,288	(100,933)
Net loss attributable to Nuvve Holding Corp.	\$ (7,666,393)	\$ (4,630,328)
Less: Preferred dividends on redeemable non-controlling interests	69,292	64,015
Less: Accretion on redeemable non-controlling interests preferred shares	161,466	161,466
Net loss attributable to Nuvve Holding Corp. common stockholders	\$ (7,897,151)	\$ (4,855,809)
Net loss per share attributable to Nuvve Holding Corp. common stockholders, basic and diluted	\$ (0.32)	\$ (0.26)
Weighted-average shares used in computing net loss per share attributable to Nuvve Holding Corp. common stockholders, basic and diluted	24,596,181	18,864,374

# CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

(unaudited)

	Three Months Ended March 31,	
	2023	2022
<b>Operating activities</b>		
Net loss	\$ (7,660,105)	\$ (4,731,261)
Adjustments to reconcile to net loss to net cash used in operating activities		
Depreciation and amortization	76,520	67,302
Stock-based compensation	965,820	1,455,644
Change in fair value of warrants liability	213,758	(4,776,000)
Change in fair value of derivative liability	76,840	(53,472)
Gains from sale of investments in equity securities	(325,155)	—
Noncash lease expense	115,576	178,849
Change in operating assets and liabilities		
Accounts receivable	(1,427,503)	454,849
Inventory	1,519,589	1,789,982
Prepaid expenses and other assets	(342,511)	(915,356)
Accounts payable	(28,178)	(2,521,672)
Accrued expenses	1,021,709	624,722
Deferred revenue	(38,062)	(23,476)
Net cash used in operating activities	<u>(5,831,702)</u>	<u>(8,449,889)</u>
<b>Investing activities</b>		
Purchase of property and equipment	(11,125)	(250,861)
Proceeds from sale of investments in equity securities	1,325,155	—
Net cash provided (used) in investing activities	<u>1,314,030</u>	<u>(250,861)</u>
<b>Financing activities</b>		
Proceeds from Direct Offering of common stock, net of offering costs	470,000	—
Proceeds from common stock offering, net of offering costs	136,717	—
Payment of finance lease obligations	(1,896)	(2,073)
Net cash provided (used) in financing activities	<u>604,821</u>	<u>(2,073)</u>
Effect of exchange rate on cash	5,413	146,949
<b>Net decrease in cash and restricted cash</b>	<u>(3,907,438)</u>	<u>(8,555,874)</u>
<b>Cash and restricted cash at beginning of year</b>	<u>16,233,896</u>	<u>32,740,520</u>
<b>Cash and restricted cash at end of period</b>	<u>\$ 12,326,458</u>	<u>\$ 24,184,646</u>

# 2023 Q1 + RECENT HIGHLIGHTS

## Nuvve Accepts Purchase Order from Los Angeles Unified School District (LAUSD) For 24 V2G Capable DC Fast Chargers

Fast chargers to be installed across two LAUSD school sites, with all chargers expected to be deployed by the middle of 2023

## Nuvve and Circle K Deploy Large-Scale Grid Services Using EV Fast Chargers in Norway and Denmark

Project brings grid services to electric vehicle fast chargers at 50 of Circle K's service stations and three to five stationary storage sites in Norway and Denmark

## Nuvve CEO Testifies in Support of California's SB 233

The proposed legislation would establish state goals and increase funding for bidirectional charging and require new EVs sold in the state to have bidirectional charging capability by 2027

## Nuvve Secures a New Record Order From a Large Fleet Operator for 25 DC Fast Chargers

Understood to be affiliated with 2022 Phase of the EPA Clean School Bus Program; incremental to expected awards from NVVE's existing school district partners



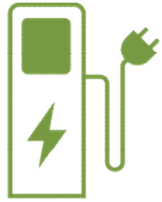
# APPENDIX



# \$1.2T BIPARTISAN INFRASTRUCTURE BILL

## Nuvve Opportunities

\$7.5B



Electric Vehicle Chargers

\$2.5B



Electric Buses

\$3B



Tech to Enhance Grid Flexibility

## Specific V2G Mentions in Bill

- **Sec. 11109:** adds the installation of electric vehicle and vehicle-to-grid (V2G) infrastructure as eligible grant funding categories.
- **Sec. 40107:** “smart grid functions” that qualify include those that facilitates the integration of V2G technologies, renewables, and EV charging infrastructure



# \$965M – EPA Clean School Bus Rebates

**EPA announcement that Biden-Harris Administration will double clean school bus rebates Awards from \$500M to nearly \$1B**

## **Nuvve Opportunities**

- Nuvve Helps **10** School Districts Receive **61** EPA Clean School Bus Rebates Totaling \$24.2M
- The total amount of clean school bus rebates equate to:
  - \$1.1M for EVSE
- School District States:
  - California - 6
  - Texas - 2
  - Arizona - 2



# Inflation Reduction Act (IRA) – August

The Inflation Reduction Act is the most significant legislation in U.S. history to tackle the climate crisis and strengthen American energy security.

**\$369** billion investment in clean energy over 10 years.

## Nuvve Opportunities

- Commercial EV credits
- Charging infrastructure tax credits
- Clarifies that bidirectional chargers are eligible for the alternative refueling tax credit
- Funding for transportation electrification programs through federal agencies

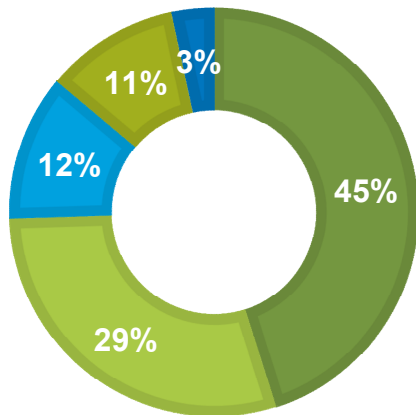


# VEHICLE ELECTRIFICATION

## POSITIVE IMPACT



ICE vehicles account for ~45% of global CO<sub>2</sub> emissions



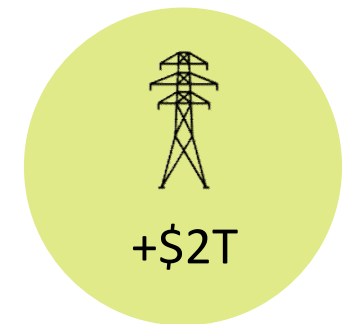
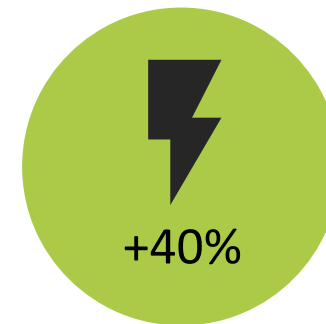
■ Road (Passenger) ■ Road (Freight) ■ Aviation

Transport accounts for 24% of CO<sub>2</sub> emissions from energy

## NEGATIVE IMPACT



EVs are projected to create a 40% increase in power demand<sup>[1]</sup> requiring a \$2T investment in grid upgrades<sup>[2]</sup>

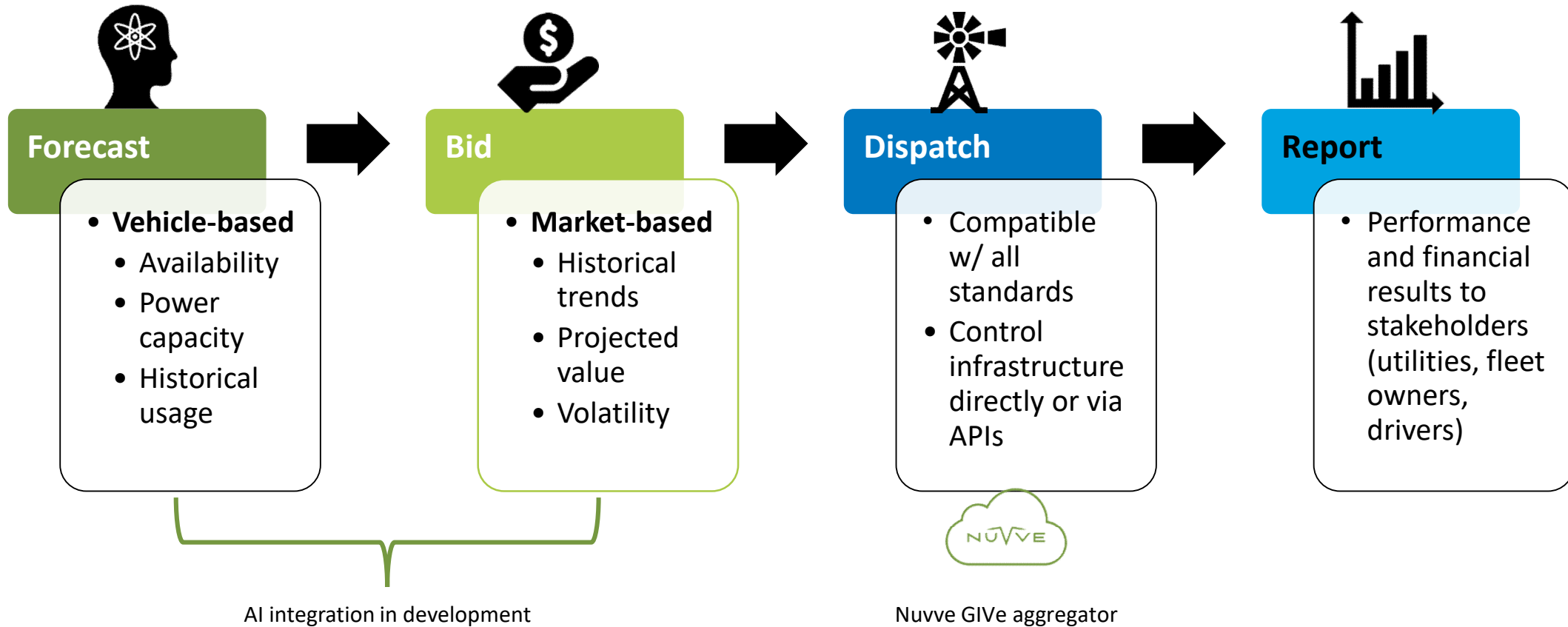


AND

Sources: 2018 global CO<sub>2</sub> stats by sector from [ourworldindata.org](https://ourworldindata.org). (1) US Department of Energy, forecast through 2050. (2) Global grid investment requirement implied based upon grid upgrade costs per EV added to the California vehicle fleet implied by SCE "Reimagining the Grid" Dec. 2020 whitepaper



# NUVVE PLATFORM: HOW IT WORKS



**Nuvve's platform simultaneously meets the needs of drivers, batteries, and the grid on a second-by-second basis**



# BATTERY HEALTH PAPER

- Learn about the factors that affect EV battery health and how intelligent energy management can help improve it
- Download the paper at [nuvve.com/battery-health](https://nuvve.com/battery-health)



## Battery Health and V2G

PREPARED BY

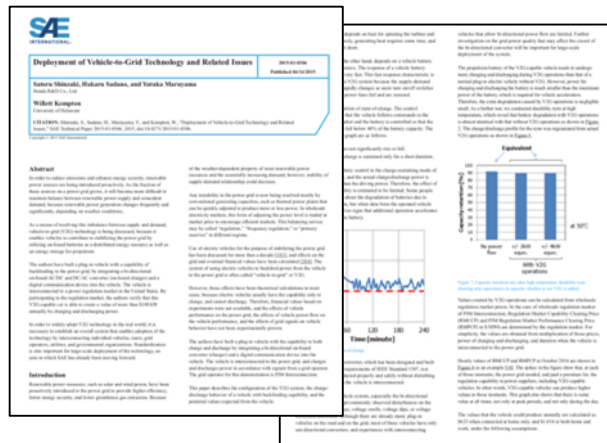
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# V2G & BATTERY HEALTH

## V2G has minimal impact on the battery

- Main factors that impact capacity are driving and age (calendar life)
- Studies show small percentage impact from V2G

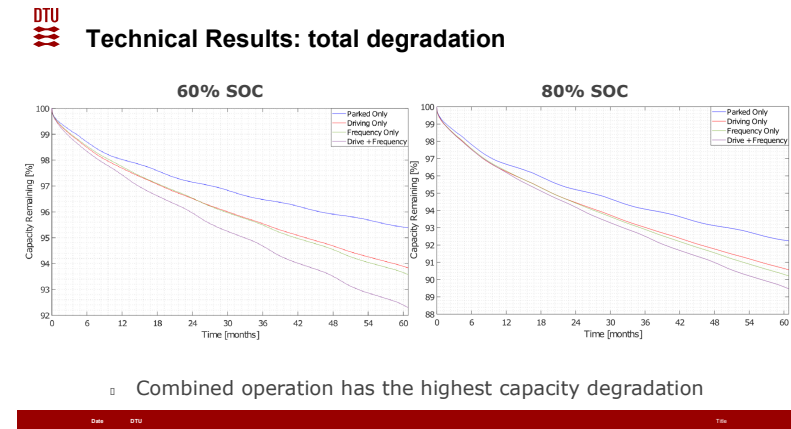
2% impact over 8 years



“Deployment of Vehicle-to-Grid Technology and Related Issues”  
2016

SAE Research Paper: Satoru Shinzaki, Hakaru Sadano, and Yutaka Maruyama, Honda R&D Co., Ltd

1-2% impact over 5 years



“Techno-economic characterization of EV battery considering degradation” 2019 Lisa Calearo, PhD Student , Center for Electric Power and Energy DTU Risø Campus

**THANK YOU**



[NUVVE.COM](http://NUVVE.COM)