

SMU Community Chat

July 28, 2021

Starting at 11 AM Eastern

Michael Cowden, Steel Market Update

Bernard Swiecki, Center for Automotive Research



SteelMarketUpdate.com/Blog/SMU-Community-Chat-Webinars

Steel Market Update



SMU Newsletter developed for active buyers & sellers of flat rolled steel.

Prices – Momentum – Trends – Analysis – with a guarantee

For more information visit www.SteelMarketUpdate.com

2021 Steel Market Update Events

Date	Conference	Status	Venue
August 3-4	Steel Hedging 201	Virtual	Online
August 23-25	SMU Steel Summit	Live	Georgia International Convention Center
September TBD	Steel 201	Virtual	Online

If you would like more information about any of our workshops, you may visit SteelMarketUpdate.com/Events or e-mail our team at Events@SteelMarketUpdate.com



Steel 101 Workshop, Severstal Dearborn 2012

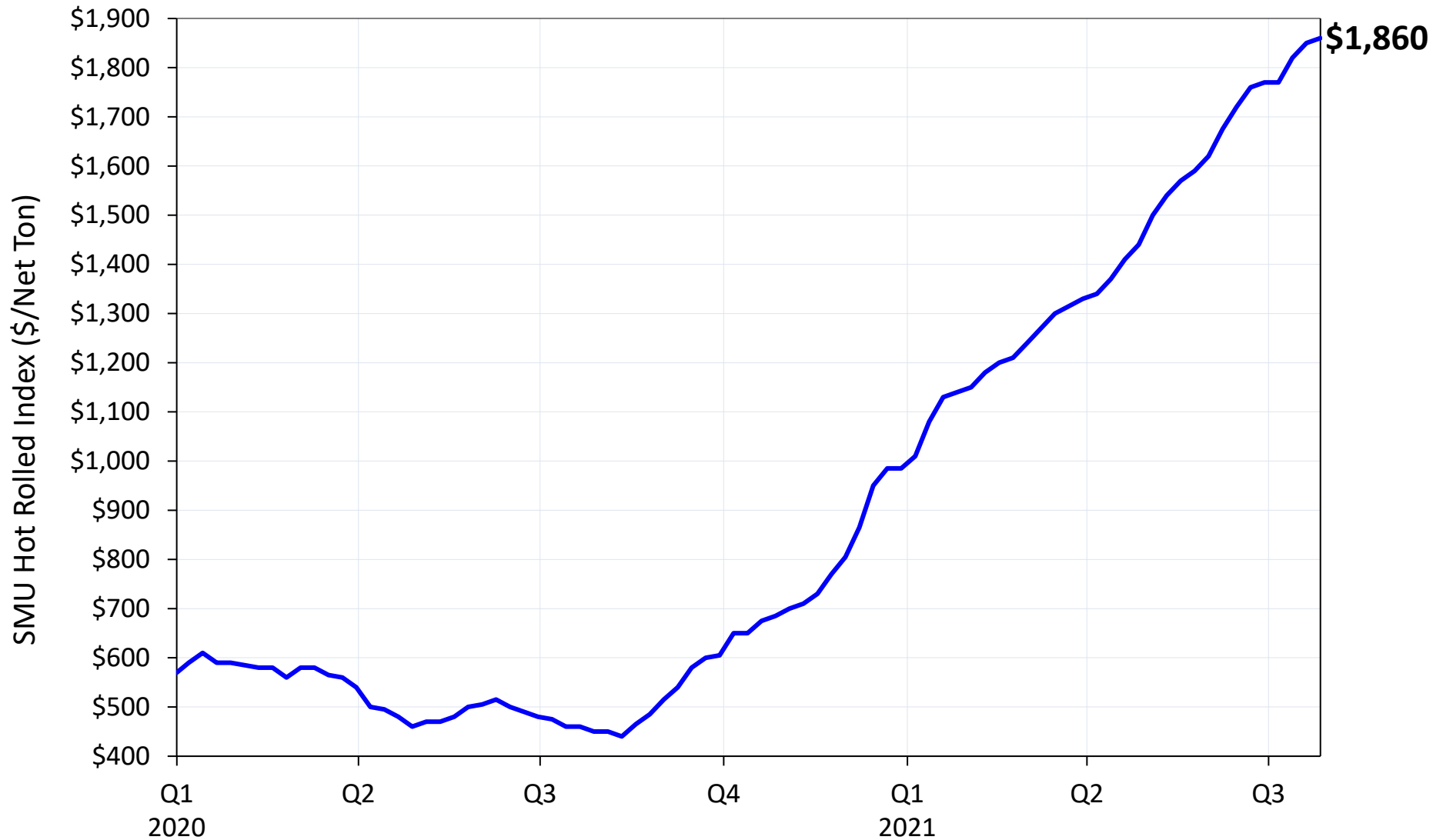
Our goal is to provide quality information to the flat rolled steel industry.

We invite over 500 companies to participate in our surveys.

Normal response rate is 100-150 individuals on any one survey.

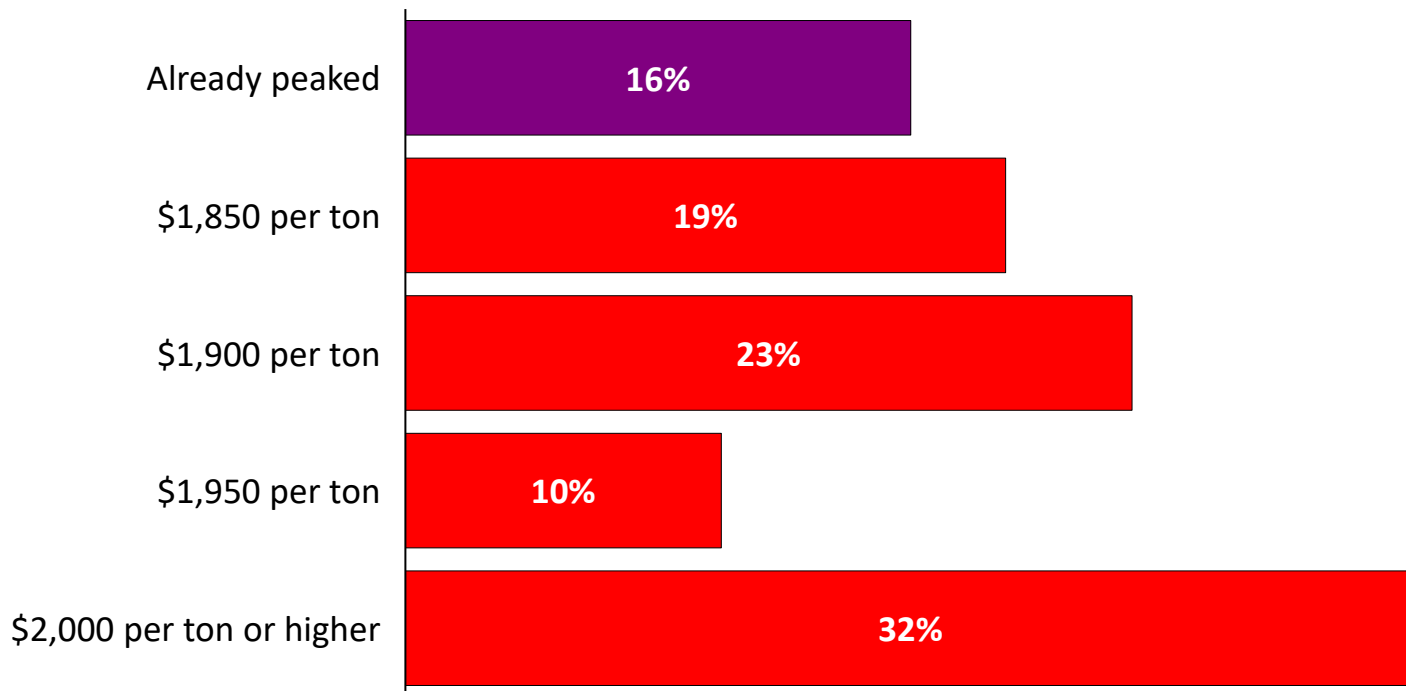
All responses are kept confidential and are never attributed to the individual or company responding.

SMU Hot Rolled Price Average



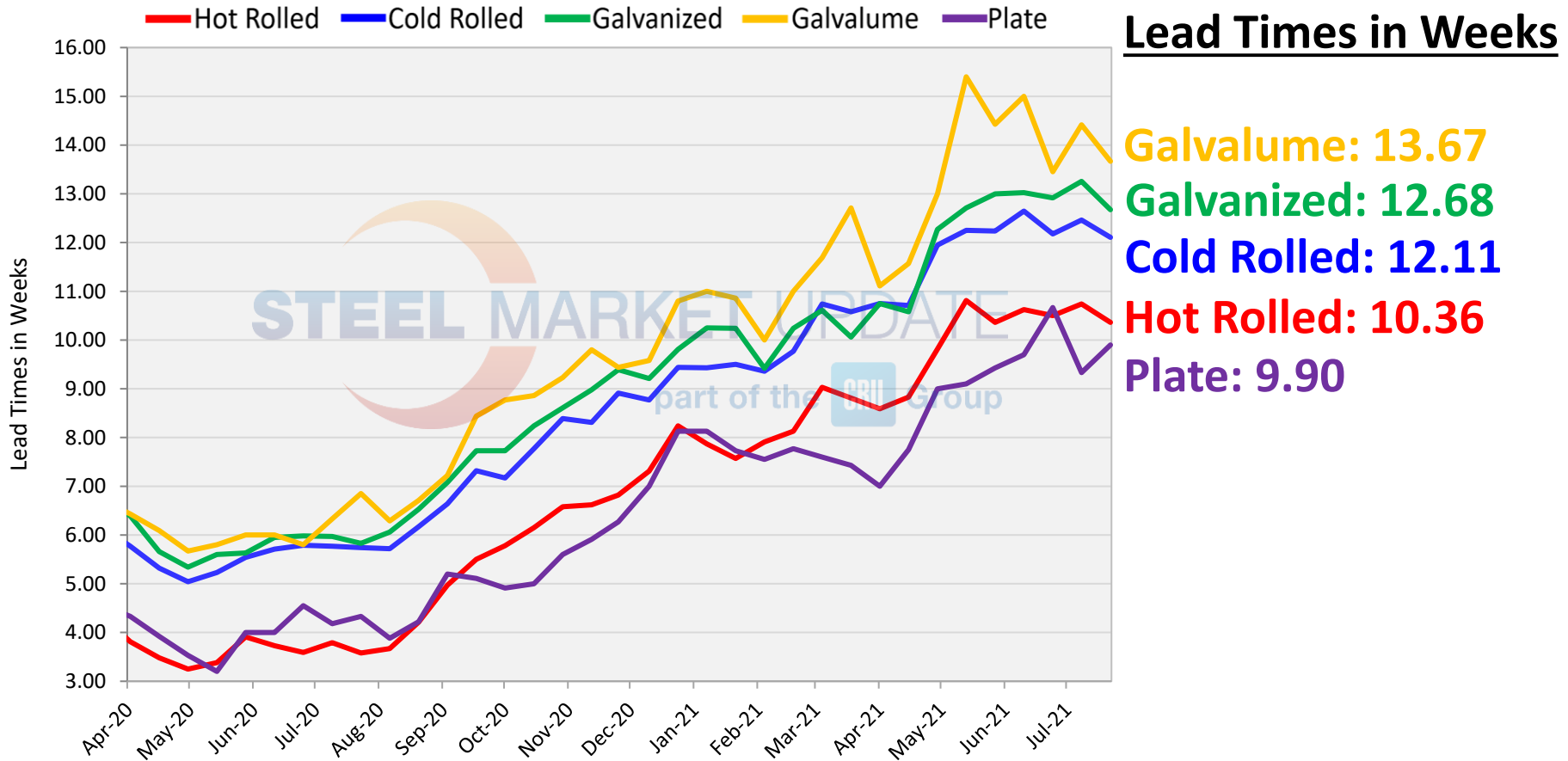
HRC Price Peak

Hot rolled coil prices average \$1,820* per ton.
Where do you think HRC prices will peak?



* As of Monday, July 19, 2021; the latest SMU HR average is \$1,850 per ton

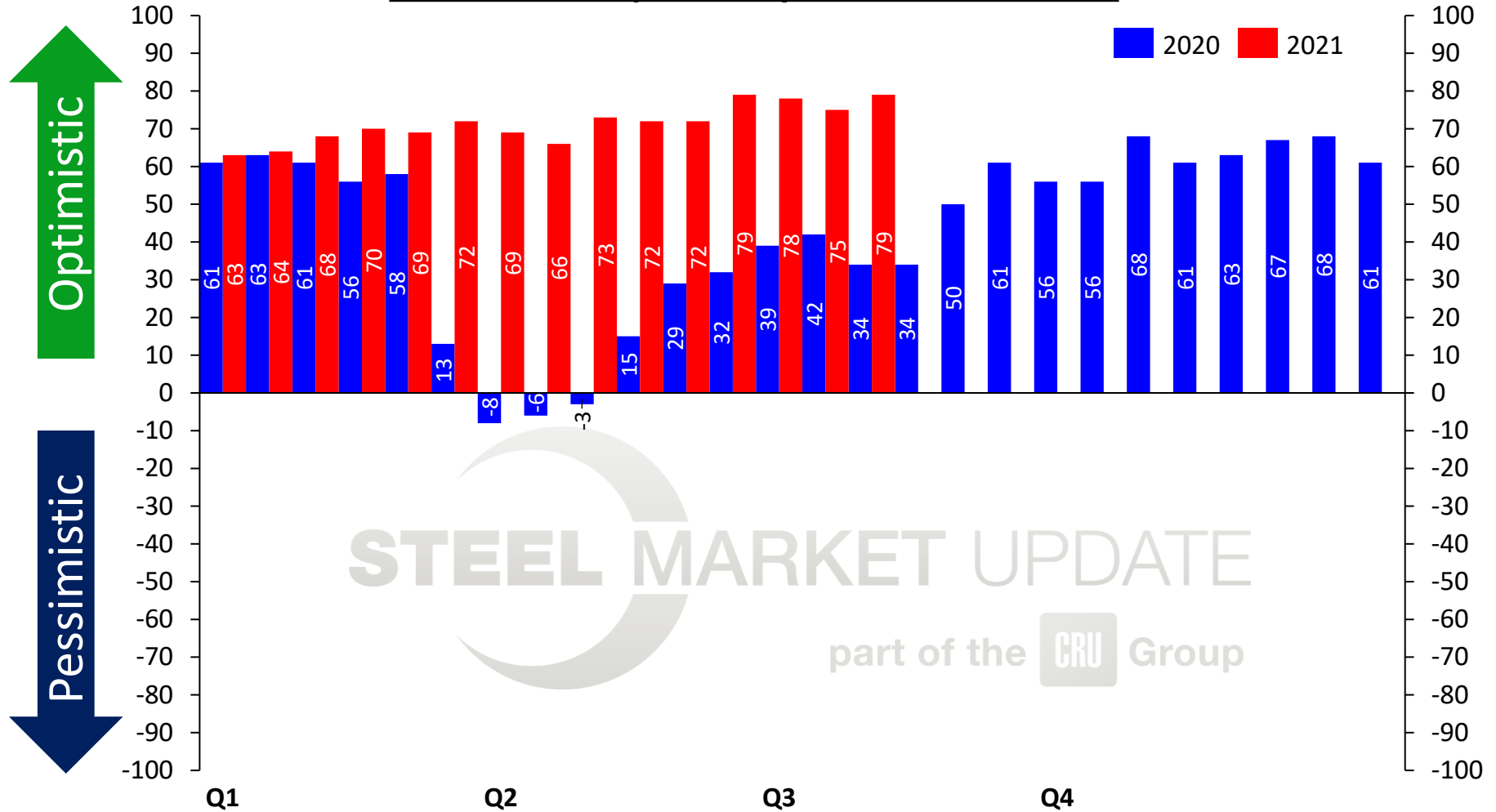
Mill Lead Times



SMU Buyers Sentiment Index

Up 4 points to +79

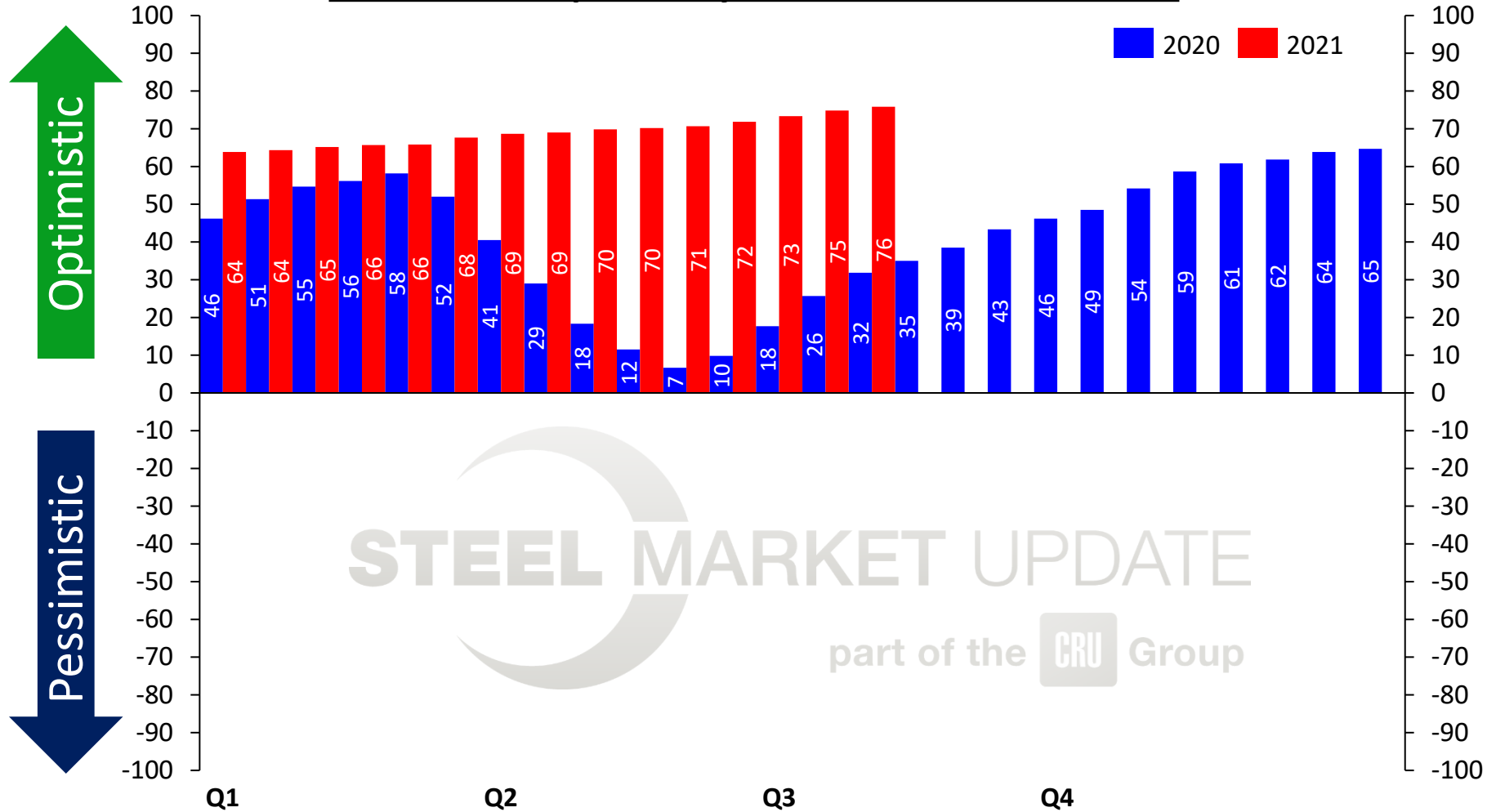
Steel Market Update Buyers Sentiment Index



SMU Buyers Sentiment Index

Three Month Moving Average at +75.83

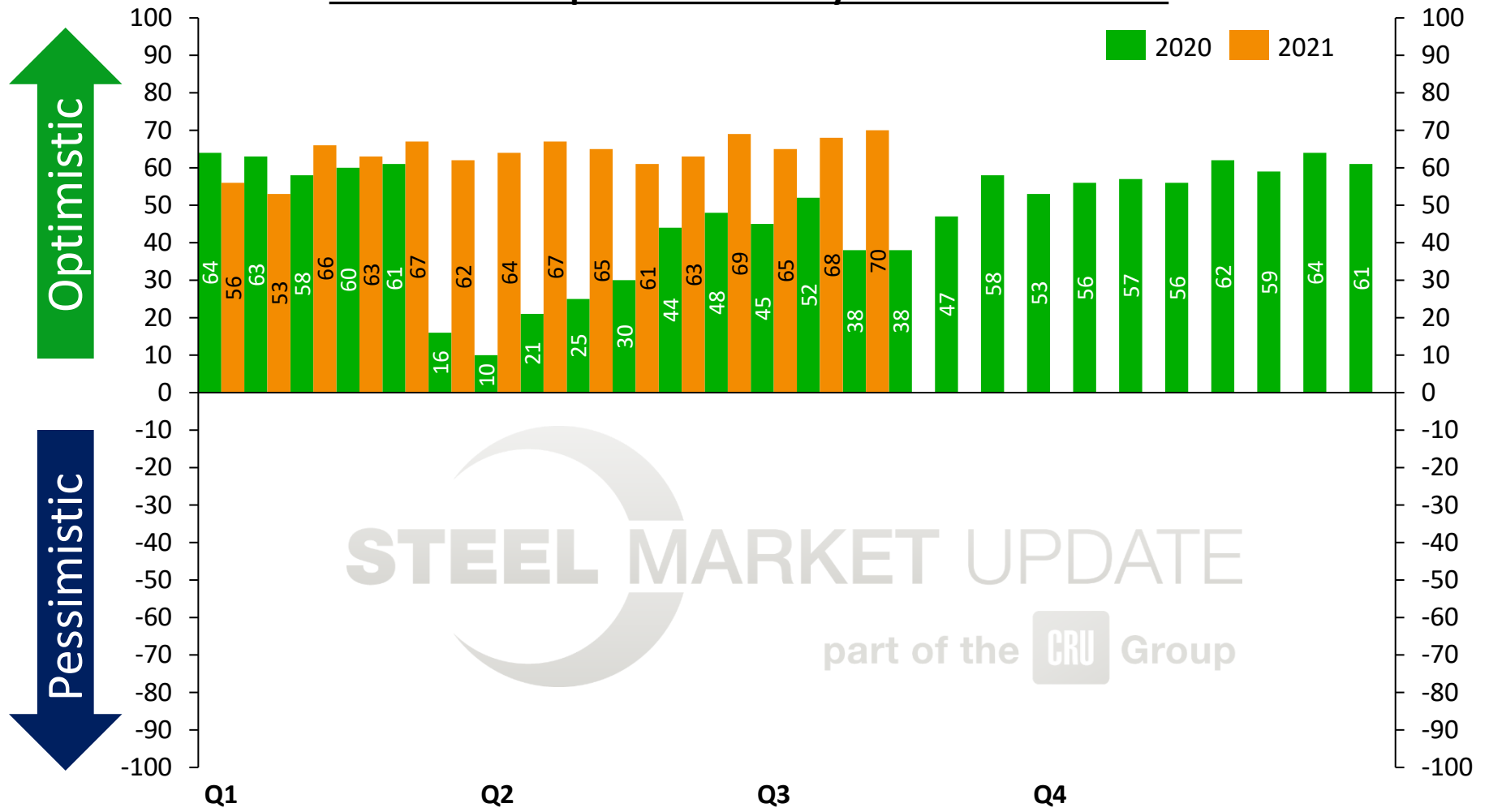
Steel Market Update Buyers Sentiment Index 3MMA



SMU Future Buyers Sentiment Index

Up 2 points to +70

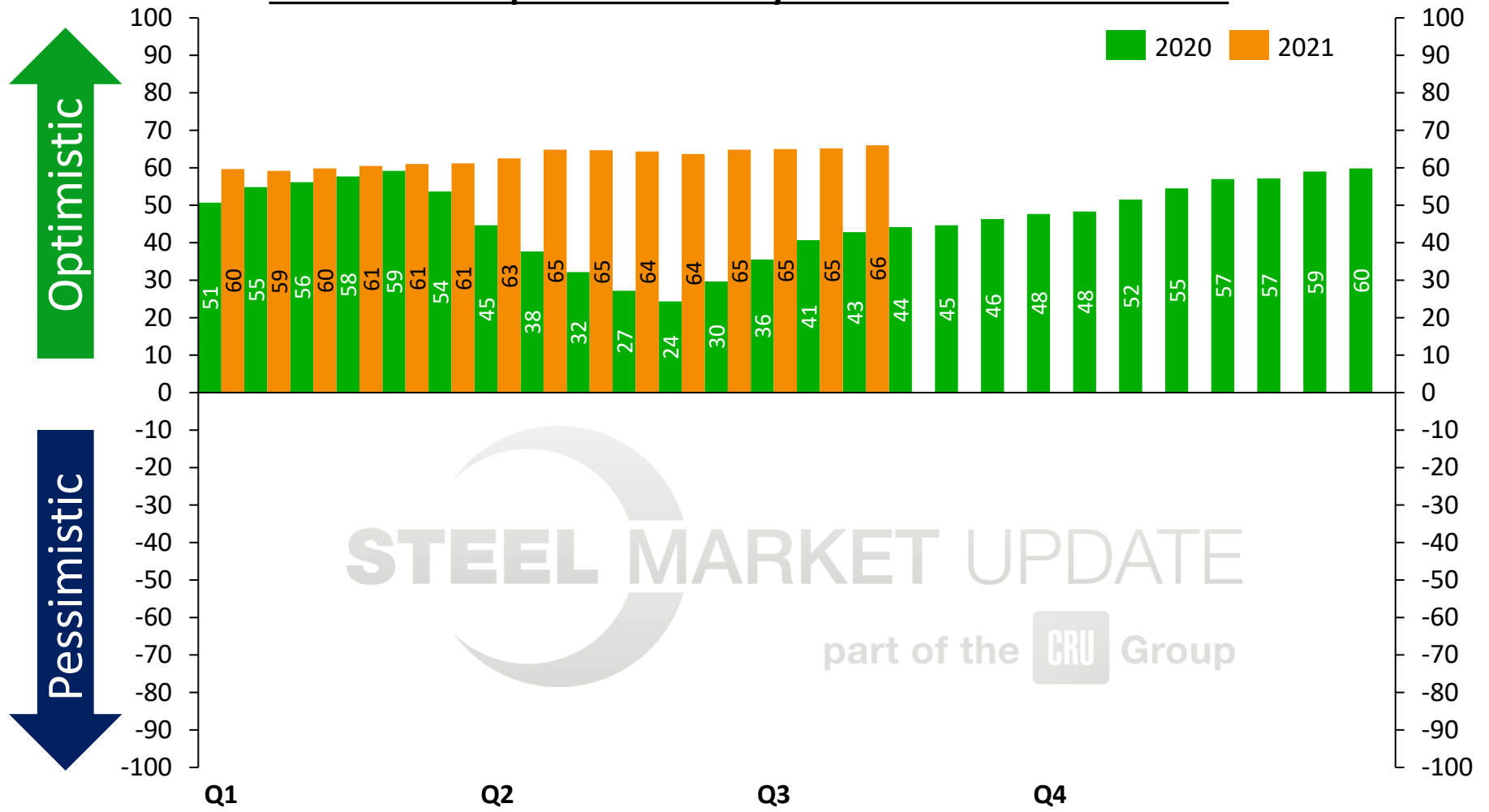
Steel Market Update Future Buyers Sentiment Index



SMU Future Buyers Sentiment Index

Three Month Moving Average at +66.00

Steel Market Update Future Buyers Sentiment Index 3MMA



Steel Market Update Inventories Report - Sheet					
	Inventory	Shipments	Shipping Days	Shipping Days of Supply	Months of Supply
Apr-21	1,588,164	798,303	21	41.8	1.99
May-21	1,723,214	760,224	20	45.3	2.27
Jun-21	1,762,724	814,844	22	47.6	2.16

Steel Market Update Inventories Report - Plate					
	Inventory	Shipments	Shipping Days	Shipping Days of Supply	Months of Supply
Apr-21	196,718	96,439	21	42.8	2.04
May-21	198,502	87,800	20	45.2	2.26
Jun-21	195,080	97,431	22	44.0	2.00



Paul joined CRU in 2011 and works as a Sponsorship and Exhibition Manager across a number of CRU's flagship conferences. He works closely with a large number of customers, tailoring packages to help them meet their marketing objectives and increase their network of influential contacts. With over 15 years' events sponsorship and marketing experience, Paul has worked on over 400 live events and a rapidly increasing number of virtual events.


www.SteelMarketUpdate.com/blog/SMU-Community-Chat-Webinars

CRU SMU Steel Summit 2021

August 23-25, 2021 • Georgia International Convention Centre, Atlanta, Georgia, USA

26 days to go

Add to calendar 

Follow us   #SMUSteel

Register

SMU Steel Summit returns in-person and virtually for 2021

SMU Steel Summit is an in-person event this year, with a digital platform for those who are not able to join us live in Atlanta.

This year's conference will be a "hybrid" event. If you are unable attend in person, we will live-stream the event through our platform. The cost to attend "virtually" is the same as the cost to attend in person.

We have been speaking to our past attendees, speakers and steel industry leaders and the appetite to meet face-to-face has been strong. With Covid-19 vaccines rolling out, we are cautiously optimistic that we can return to almost normal by the summer. We will be closely monitoring the situation with Covid-19, and we are committed to providing an event which will be fully compliant with safety measures advised or required by the state of Georgia and/or the CDC.

The Steel Summit has gone from strength to strength over the last few years, growing from 434 attendees in 2016 to more than 1000 attendees in 2019. Even though we ran the event as a virtual conference in 2020, more than 900 industry executives joined us online. As we return to our live in-person, event the team is excited to welcome you to Georgia this August.

Representing more than 400 companies from the North American Steel Market, attendees gather at the event to learn what the future holds and to network and do business.



Bernard Swiecki serves as Director of Research at the Center for Automotive Research (CAR), as well as Director of the Automotive Communities Partnership (ACP). He joined CAR in 1994.

Mr. Swiecki manages research projects studying a wide breadth of automotive industry structure and technology topics. He manages CAR's analysis of vehicle market and production data. He has also led trade missions to China, Italy, India, and Russia.

Mr. Swiecki has authored numerous articles for print publications, as well as a monthly column, on the automotive industry. He regularly presents at conferences and industry events around the world, as well as providing interviews to local, national, and global media.

[SteelMarketUpdate.com/blog/SMU-Community-Chat-Webinars](https://www.steelmarketupdate.com/blog/SMU-Community-Chat-Webinars)



CENTER FOR
AUTOMOTIVE
RESEARCH

Steel Market Update

- The Electrified Automotive Industry

Bernard Swiecki – Director, Research

28 July, 2021

THE CENTER FOR AUTOMOTIVE RESEARCH (CAR)

Automotive industry contract research and service organization (non-profit) with more than 30 years experience forecasting industry trends, advising on public policy, and sponsoring multi-stakeholder communication forums.



RESEARCH

Independent research and analysis on critical issues facing the industry.



EVENTS

Industry-driven events and conferences that deliver content, context, and connections.



CONNECT

Consortia that bring together industry stakeholders to participate in working groups, networking opportunities, and access to CAR staff.

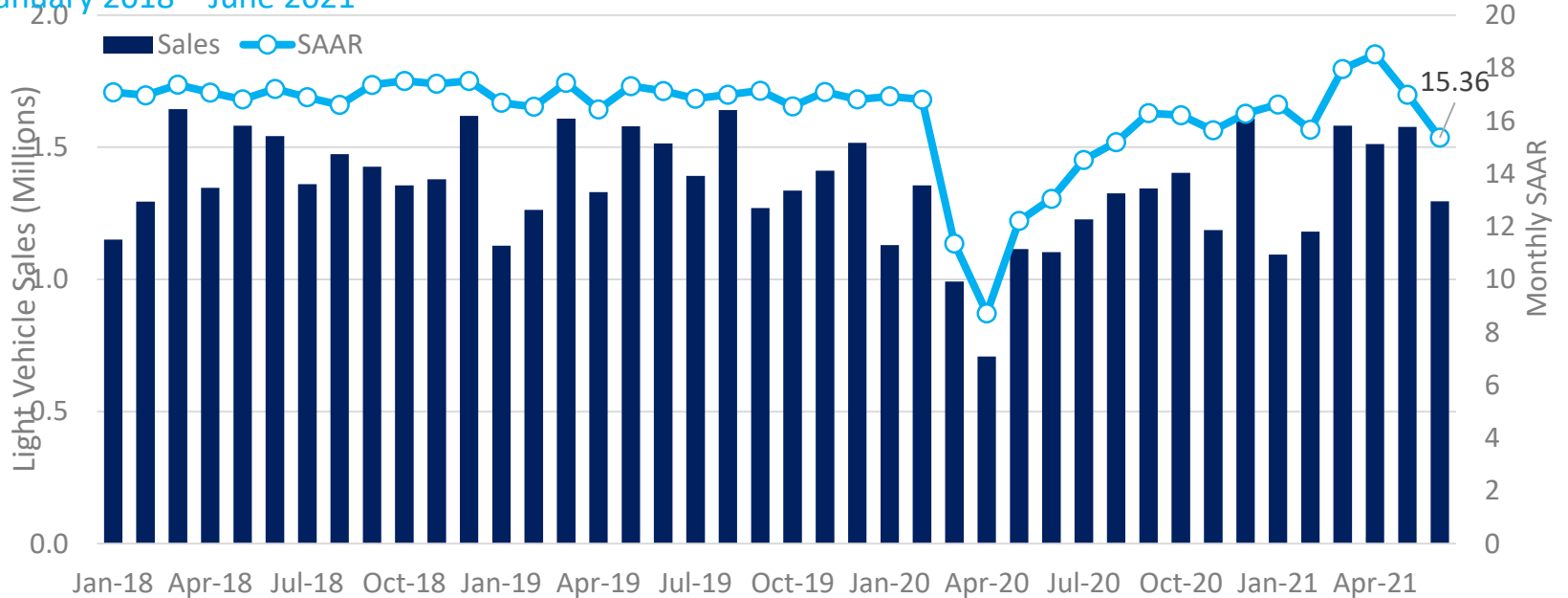
An aerial photograph of a complex multi-level highway interchange, overlaid with a semi-transparent blue filter. The roads curve and loop through a cityscape, with buildings and other structures visible in the background.

North American Automotive Industry Status

U.S. light vehicle June SAAR lower than May's

U.S. Light Vehicle Monthly Sales and SAAR

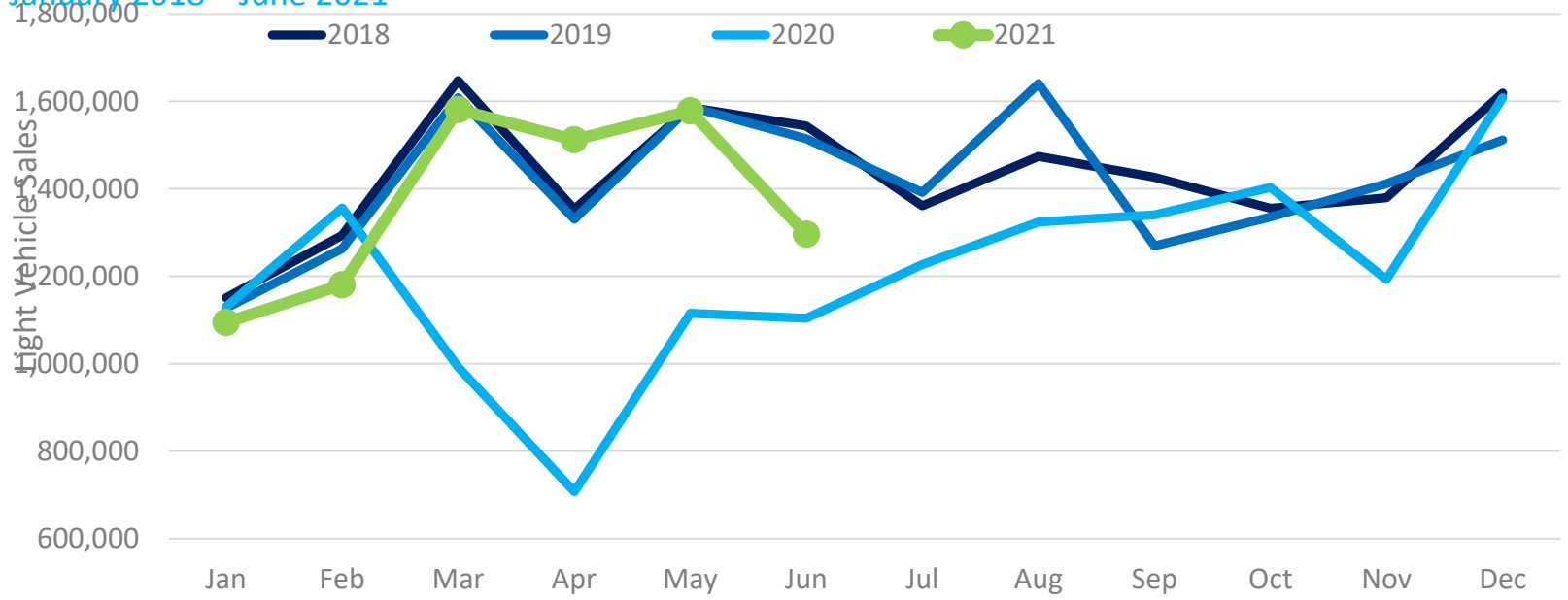
January 2018 – June 2021



Monthly sales have fallen, no longer close to pre-pandemic levels

U.S. Light Vehicle Monthly Sales

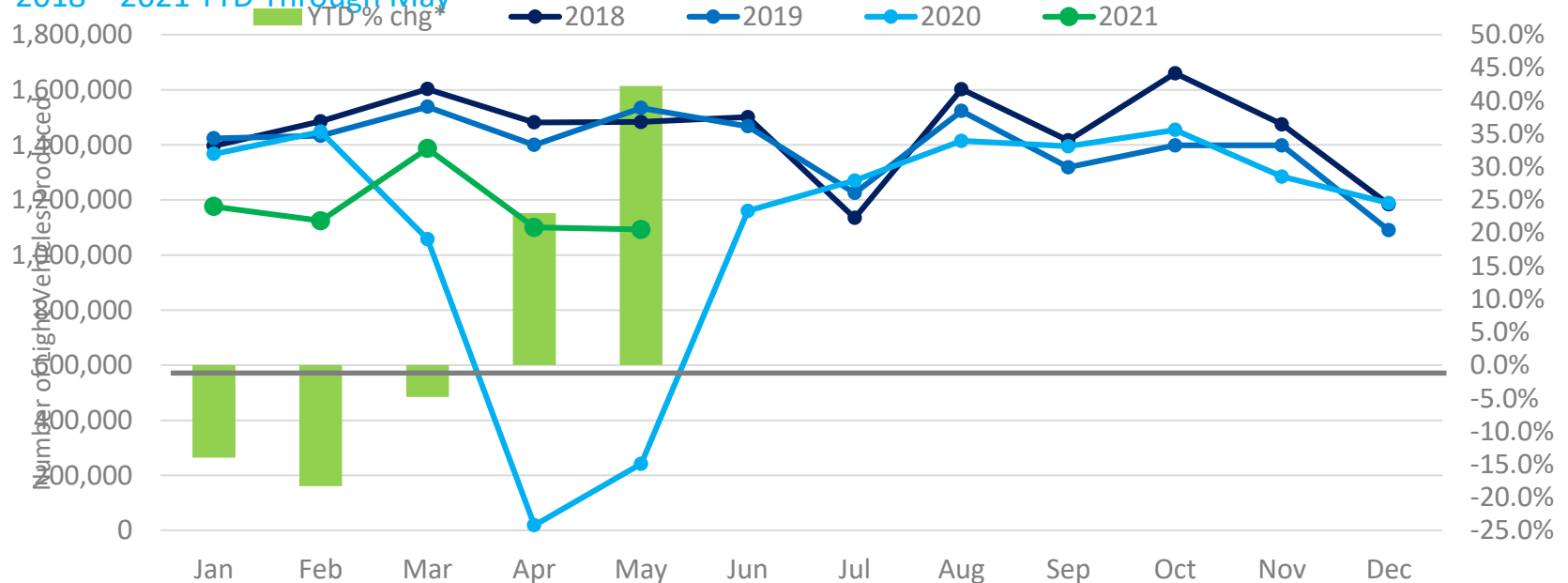
January 2018 – June 2021



North American production is recovering, but yet to reach pre-pandemic levels

North America Monthly Vehicle Production

2018 – 2021 YTD Through May



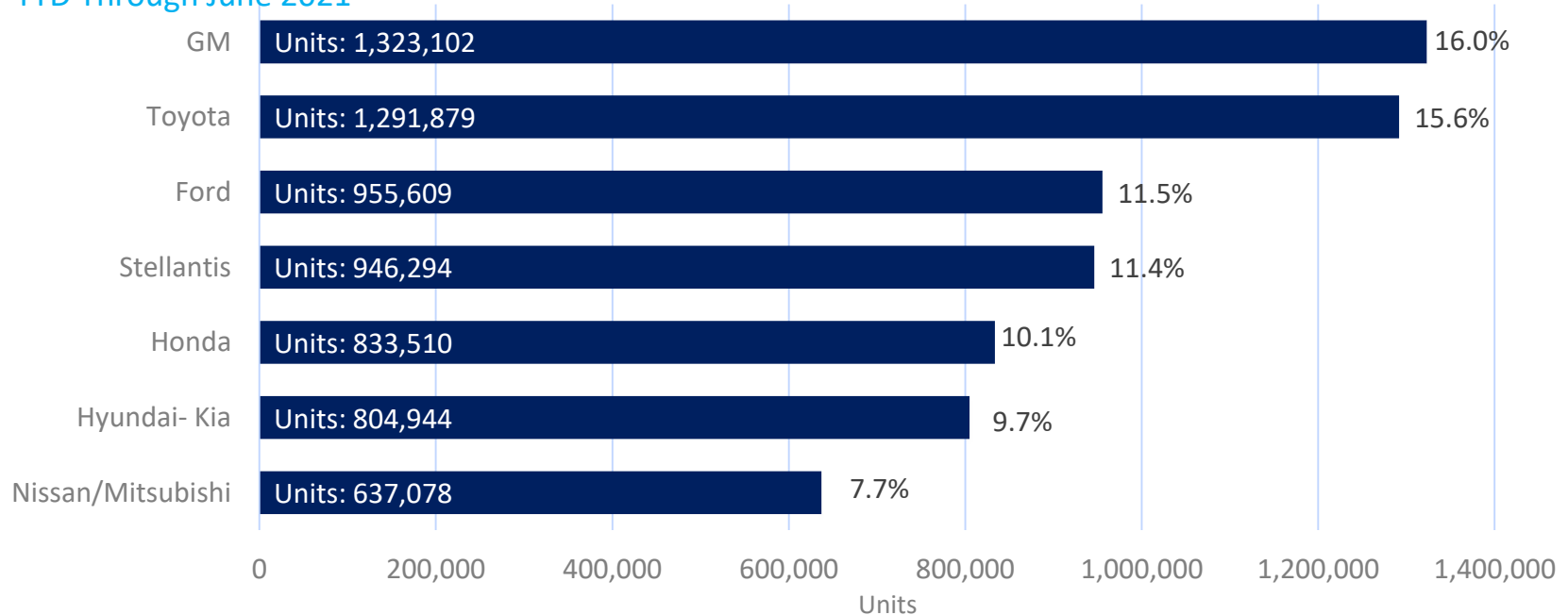
* Includes Medium Duty. YTD % change may not match other estimates due to data availability

CENTER FOR AUTOMOTIVE RESEARCH

GM holds the highest market share, but is closely followed by Toyota

U.S. Market Share

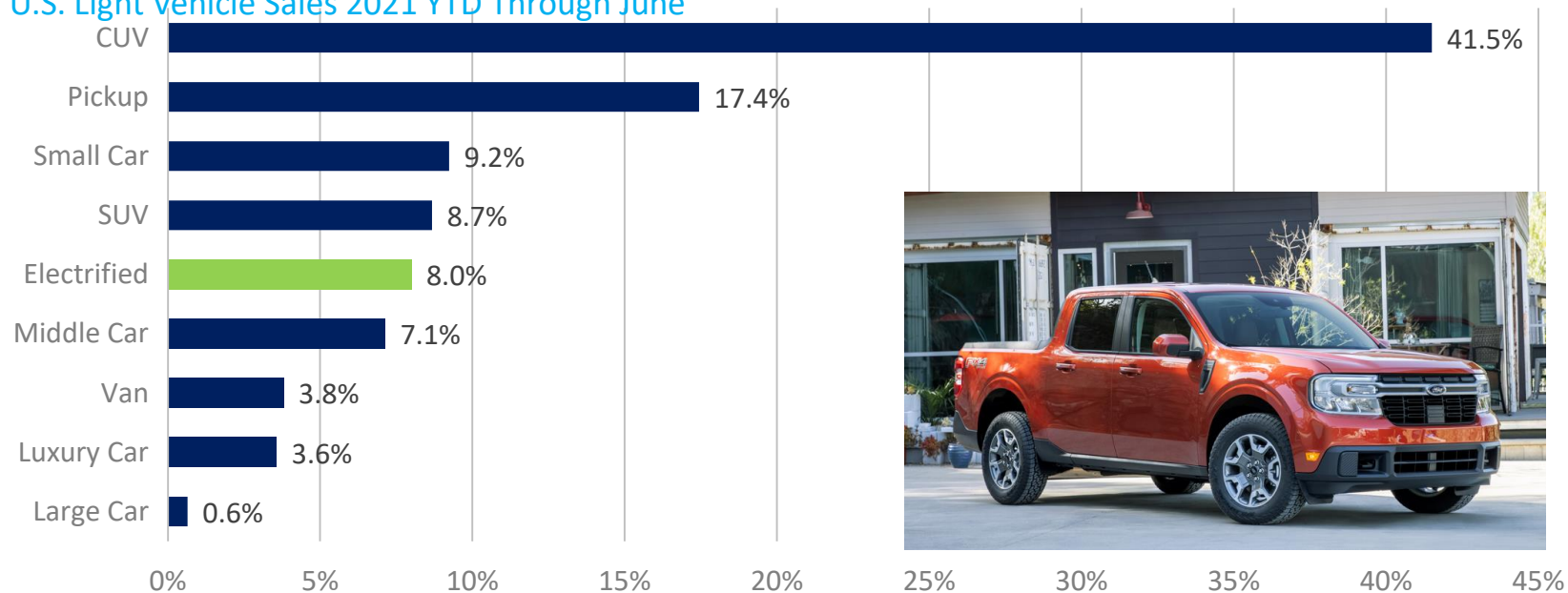
YTD Through June 2021



Electrified vehicles are 8% of the LV market

Market Share: Segment Breakdown

U.S. Light Vehicle Sales 2021 YTD Through June



Note: Electrified Segment consists of BEVs, HEVs and PHEVs; all other segments are sales exclusive of Hybrid models

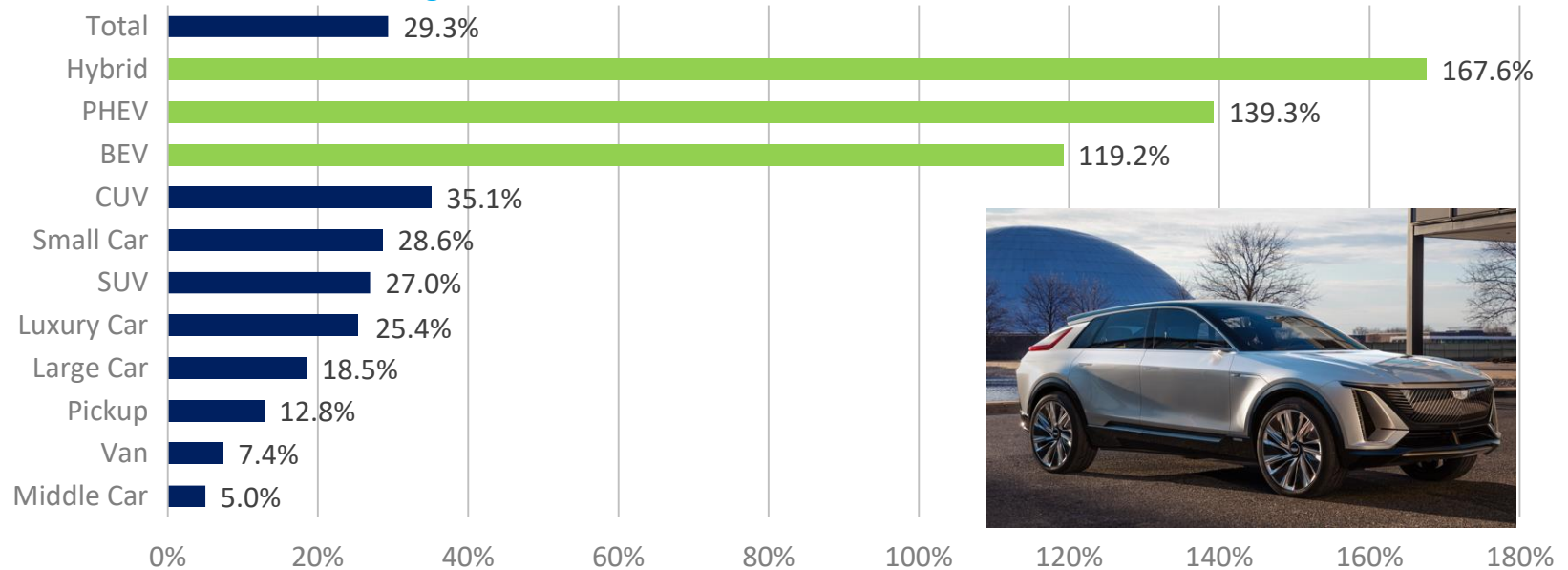
CENTER FOR AUTOMOTIVE RESEARCH

Source: Wards Automotive Reports and CAR Research

Electrified vehicles see a massive increase in year-to-date sales since last year

Segment Breakdown: U.S. Light Vehicles Sales Percent Change

2021 YTD vs. 2020 YTD Through June



Note: All other segments are sales exclusive of Hybrid models

EVs are changing the narrative



REGULATORY

Global regulations are quickly moving to lower-carbon transportation



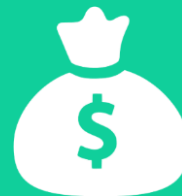
TECHNOLOGY

Technology is more capable with longer range & lower costs



PRODUCT

EVs will soon be available in every segment—from compacts to pickups



FINANCE

Investors are rewarding market disruptors & sustainable companies

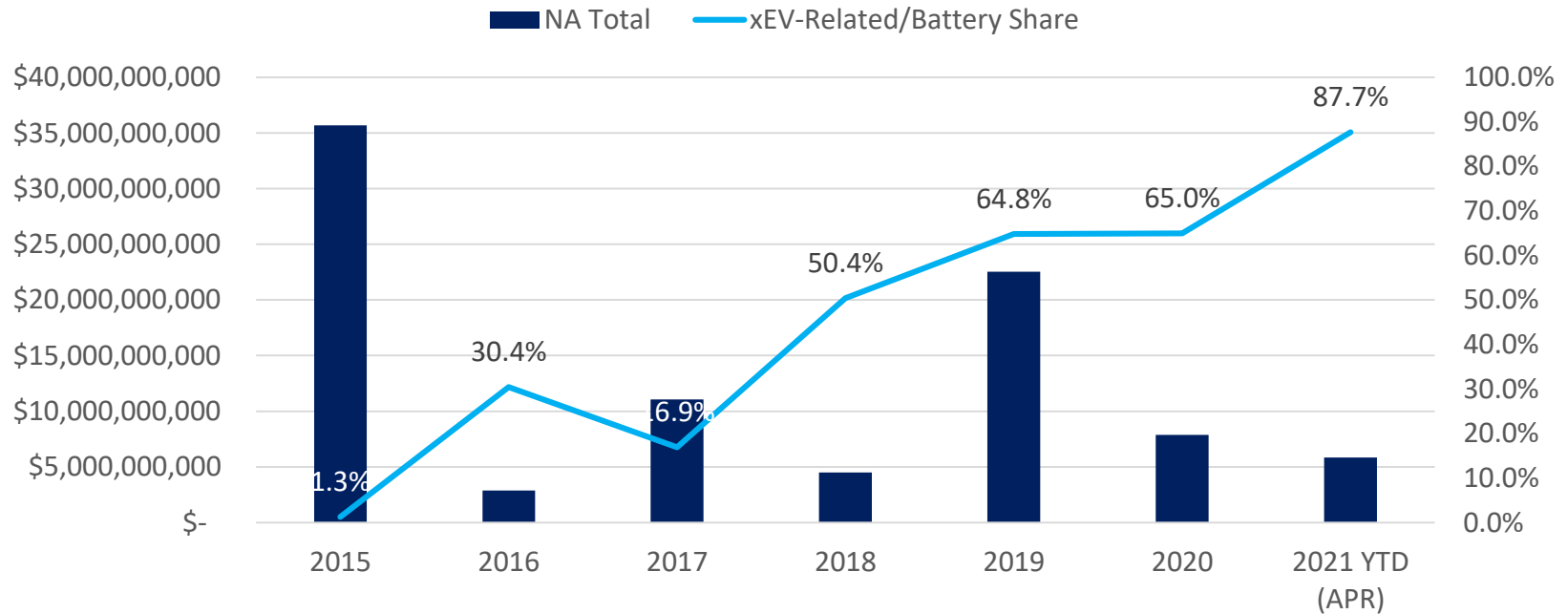


MARKET

EV market share is increasing—unrelated to real gas prices



Since 2015, 34% of automaker investments announced in North America have been xEV/battery related



U.S. Lithium-Ion Battery Facilities

As of May 2021



*Announced, but factory has not started production

**LG announced \$4.5 billion in total to be committed across three plants (Holland, MI and two new facilities TBD)

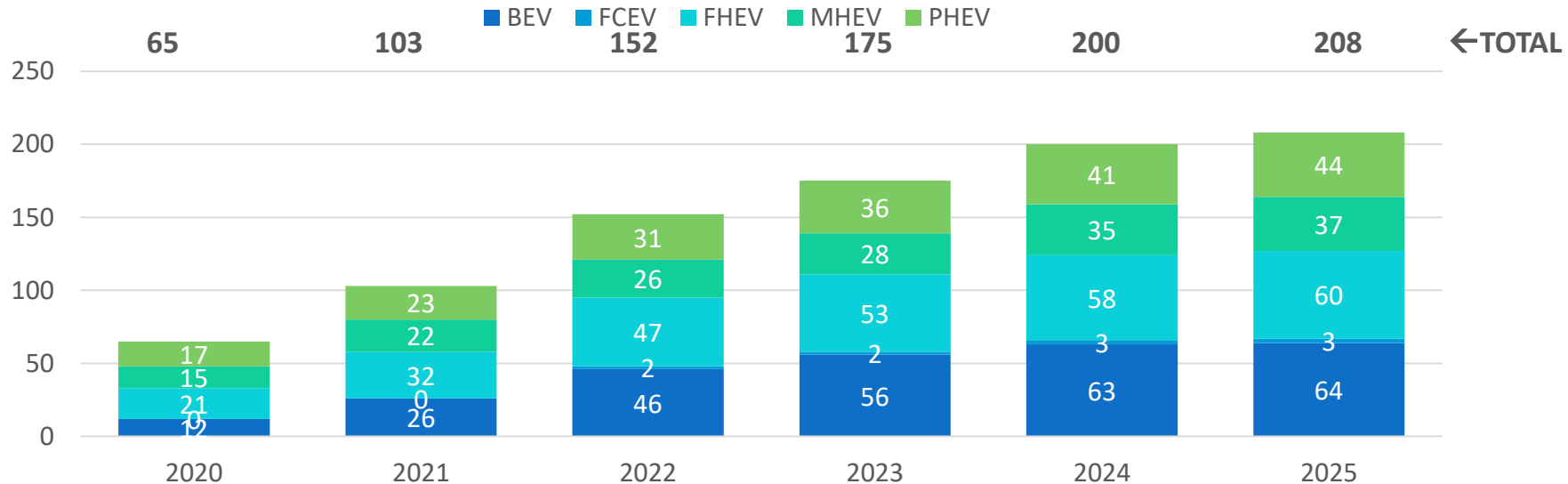
Company Name	City	State	Investment
Tesla_Panasonic	Sparks	NV	\$5.0B
SK Innovation*	Commerce	GA	\$2.6B
Ultium Cells*	Lordstown	OH	\$2.3B
GM-LG Energy*	Spring Hill	TN	\$2.3B
LG-Chem**	Holland	MI	**
AESC_Envision	Smyrna	TN	\$1.7B
Accumotive	Vance	AL	\$1.0B
Xalt_Freudenberg	Midland	MI	\$0.9B
Volvo	Ridgeville	SC	\$0.6B
GM	Brownstown	MI	\$0.3B
JCI_Brookfield	Holland	MI	\$0.2B
Microvast*	Clarksville	TN	\$0.2B
Ford	Rawsonville	MI	\$0.2B
SAFT	Jacksonville	FL	\$0.1B
Samsung SDI	Auburn Hills	MI	\$62.0M
BMW	Spartanburg	SC	\$10.0M
AKASOL*	Hazel Park	MI	N/D



Forecasts

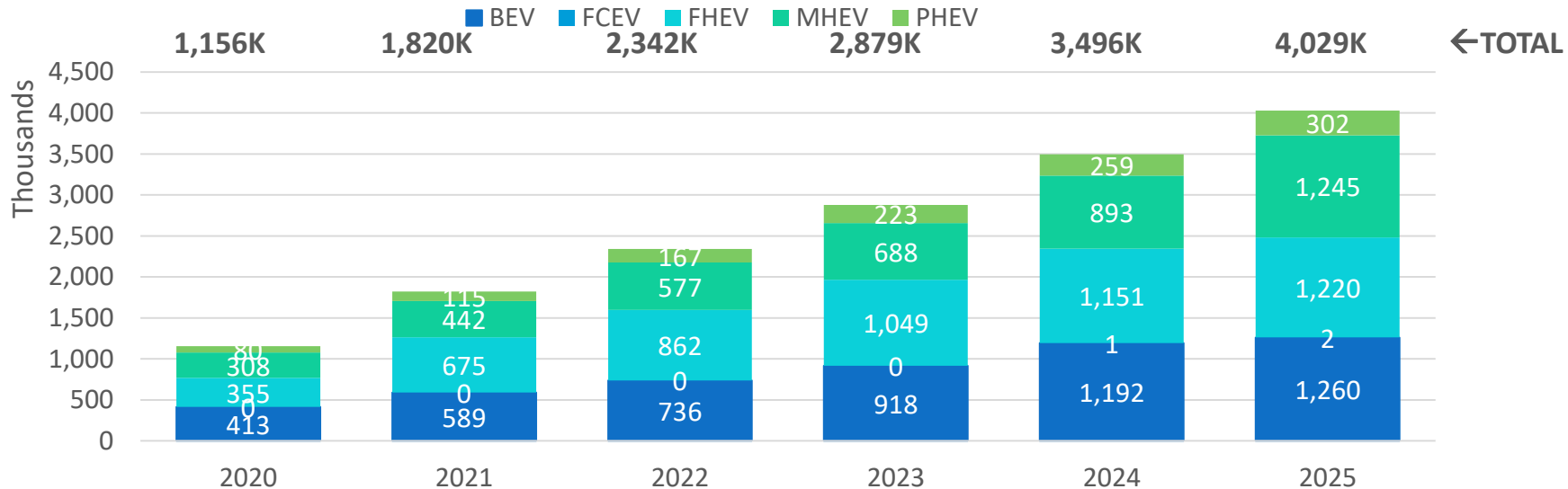
Electric/Electrified Models Will Proliferate 2020 – 2025 Forecast

NUMBER OF ELECTRIC/ELECTRIFIED NAMEPLATES PRODUCED IN NORTH AMERICAN PLANTS



Electric/Electrified Production Volume Outlook 2020 – 2025 Forecast

TOTAL ELECTRIC/ELECTRIFIED VEHICLES PRODUCED IN NORTH AMERICAN PLANTS



An aerial photograph of a complex, multi-level highway interchange, possibly a cloverleaf interchange, with several overpasses and ramps. The image is heavily filtered with a blue color, giving it a monochromatic, futuristic appearance. The text 'Electrification Transformation' is overlaid in white, bold, sans-serif font across the center of the image.

Electrification Transformation

40% by 2030? How about 60% by 2030?



BUSINESS NEWS MARCH 24, 2021 / 2:33 PM / UPDATED 41 MINUTES AGO

Exclusive: Democratic lawmakers urge Biden to set tough vehicle emissions rules - letters

By David Shepardson

3 MIN READ



A group of more than 70 U.S. House Democrats led by Representative Doris Matsui urged Biden to set tough emissions rules that ensure “60% of the new passenger cars and trucks sold are zero-emission by 2030,” while 10 U.S. senators led by Democrat Edward Markey urged Biden “to set a date by which new sales of fossil fuel vehicles will end entirely.”

Markey’s letter, which was also signed by Senators Richard Durbin, Sheldon Whitehouse, Elizabeth Warren, Jeff Merkley and others says it is essential “to ensure that we are on a trajectory to achieve the near-zero emission fleet that scientists have called for by 2050.”



FILE PHOTO: Morning traffic drives on the 405 freeway in Los Angeles, California, U.S., November 17, 2019.
REUTERS/Lusy/Nicholsen

Goal of Biden's trade policies → More U.S. jobs



MADE IN AMERICA

- Reshoring tax credits
- USD 400 B “Buy American” procurement program
- Promote “Made-in-America” for federal contracts, grants, and other assistance
- Appoint a “Made-in-America” Director at OMB



ENGAGE WITH ALLIES

- Re-build trade alliances & relationships
- Support & reform WTO
- May negotiate with allies to remove tariffs
- Deal with China



ENFORCE AGREEMENTS

- USMCA
 - Labor provisions
 - Dispute resolution

xEV Drivetrain

Key Trends - Technology

ICE



Key Trends:

- %-ICE powertrain declining, but will persist through 2040
- Increasing %-mix of gasoline direct injection, turbo's and new concepts

Impacts:

- De-emphasis of ICE technology development
- Tier 1 suppliers pursuing dual strategy: harvest ICE, while increased BEV investment

Electrification



MEV & FHEV



PHEV

Key Trends:

- ICE downsizing, but increasing performance & systems integration requirements with hybrids
- Materials light-weighting to offset added weight of batteries and power electronics
- Growing importance of power electronics and software

Impacts:

- Increased use of HSS, Aluminum, and mixed materials including powertrain applications
- USD\$ content per vehicle (CPV) for ICE to peak in 2022 for traditional ICE suppliers
- CPV shifting to power electronics and batteries; converging with ICE before 2030



BEV

Key Trends:

- Dedicated 'skateboard' platforms to replace legacy vehicle architectures
- Automakers expect cost-parity w/ ICE's before 2030, assuming battery costs continue falling, as expected
- New market entrants

Impacts:

- 40% fewer stamped parts vs ICE; offset by power electronics & batteries
- Market risk w/ new entrants
- Cost neutral for investment decisions before 2030



FCEV

Key Trends:

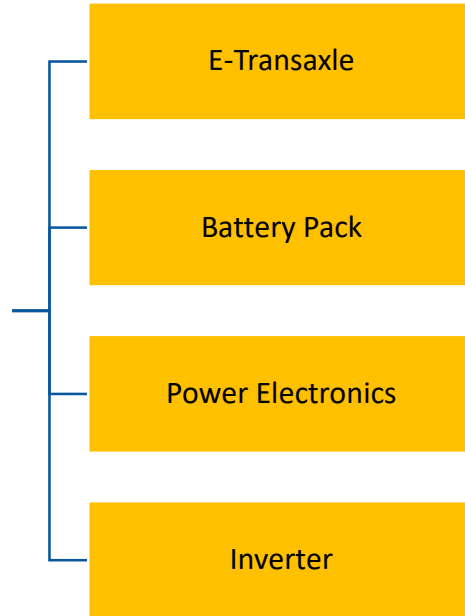
- Inconsistent technology development among automakers
- Growing but likely to remain niche product applications during timeframe
- Regional demand variation likely to emerge with Asia and Europe leading, and North America-lagging
- Greater near-term opportunity seen with HD trucks

Impacts:

- Niche supply-base w/ outsourcing opportunities
- Lower volume-applications

BEV Drivetrain – Main Systems

Driving Change



- E-Transaxles are one of four main systems that comprise the BEV powertrain. They play an important role of both producing mechanical power (via a set of e-motors) & matching the appropriate power to a vehicle's wheels (via a transmission including a gearbox).
- Battery Pack Is the highest cost (value added?) system for BEVs. It is also evolving the fastest (which has implications for investment).
- Power electronics and Inverters are comprised of electrical/electronic subcomponents often made off-shore

BEV drivetrain has four key subsystems—the battery is by far the most expensive

BEV Drivetrain

Important Implications for Suppliers



Change in
vehicle content

ICE
Example
@
\$35,000 MSRP
Passenger Car



Major Systems Affected by Transitioning to BEV

⚠	Axles, driveshafts & auxiliary components (Reduced complexity)	↓
✗	Exhaust system (Eliminated)	↓
✗	Fuel system (Eliminated)	↓
⚠	Transmission including clutches, planetary gears and torque converter (eliminated and replaced with electric drive unit and electric motors, 2 assumed in example but up to 4 possible)	↓
✗	Engine (Eliminated)	↓
+	Power electronics and high-voltage electrical architecture (Added)	↑
+	Battery pack (Added)	↑
+	Other systems affected including body structures (increased content), audio/infotainment (upgraded), braking (upgraded), climate control/HVAC (upgraded)* <i>*Beyond scope of current research study</i>	↑



Thank you

Bernard Swiecki, bswiecki@cargroup.org

Thank You

Thank you for attending our SMU Community Chat. And a special thank you to Mr. Swiecki for his participation today.

Our next webinar is **Wednesday, August 11 at 11 AM ET** with SMU President and Publisher **John Packard**.

To contact Michael Cowden: Michael@SteelMarketUpdate.com

To contact Bernard Swiecki: Bswiecki@CarGroup.org

For information about subscribing to SMU, contact Paige Mayhair: Paige@SteelMarketUpdate.com

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