

# A TECHNOLOGY NEUTRAL APPROACH TOWARD CO2 REDUCTIONS

Smokey Mountains Mobility Conference

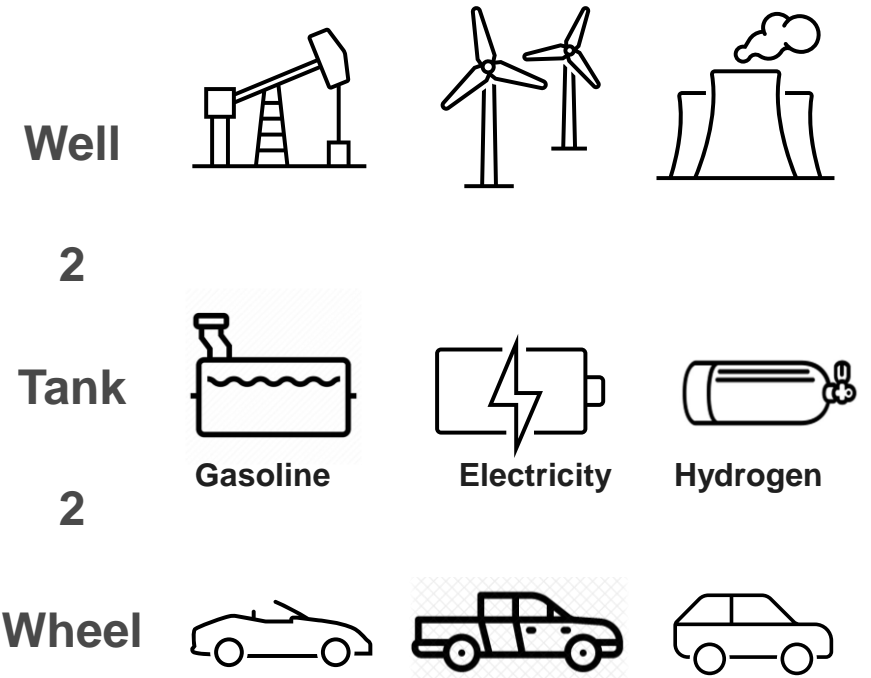
October 30, 2024

# OUR ENVIRONMENT COMMITMENT

## TOYOTA ENVIRONMENTAL CHALLENGE 2050



| CHALLENGE 1  | CHALLENGE 2   | CHALLENGE 3                                    | CHALLENGE 4  | CHALLENGE 5   | CHALLENGE 6   |
|--|---|--|--|---|---|
| New vehicle Zero CO <sub>2</sub> Emissions Challenge | Life Cycle Zero CO <sub>2</sub> Emissions Challenge | Plant Zero CO <sub>2</sub> Emissions Challenge | Challenge of Minimizing and Optimizing Water Usage | Challenge of Establishing a Recycling-based Society and Systems | Challenge of Establishing a Future Society in Harmony with Nature |



# TOYOTA IS TRANSITIONING TO AN ELECTRIC FUTURE

## Toyota/Lexus Electrified Lineup 2024/2025



### Customer-First Strategy

- The Right Vehicle
- at the Right Time
- in the Right Place
- Electrified options for all needs and available infrastructure
- More vehicles reducing emissions

Hybrid-only 9<sup>th</sup> generation Camry on sale April 2024; Latest dedicated hybrid model  
Toyota Electrified Sales: 29% for full year 2023; Sep 2024 monthly sales reached 48%



# TOYOTA BATTERY MANUFACTURING, NORTH CAROLINA (TBMNC)

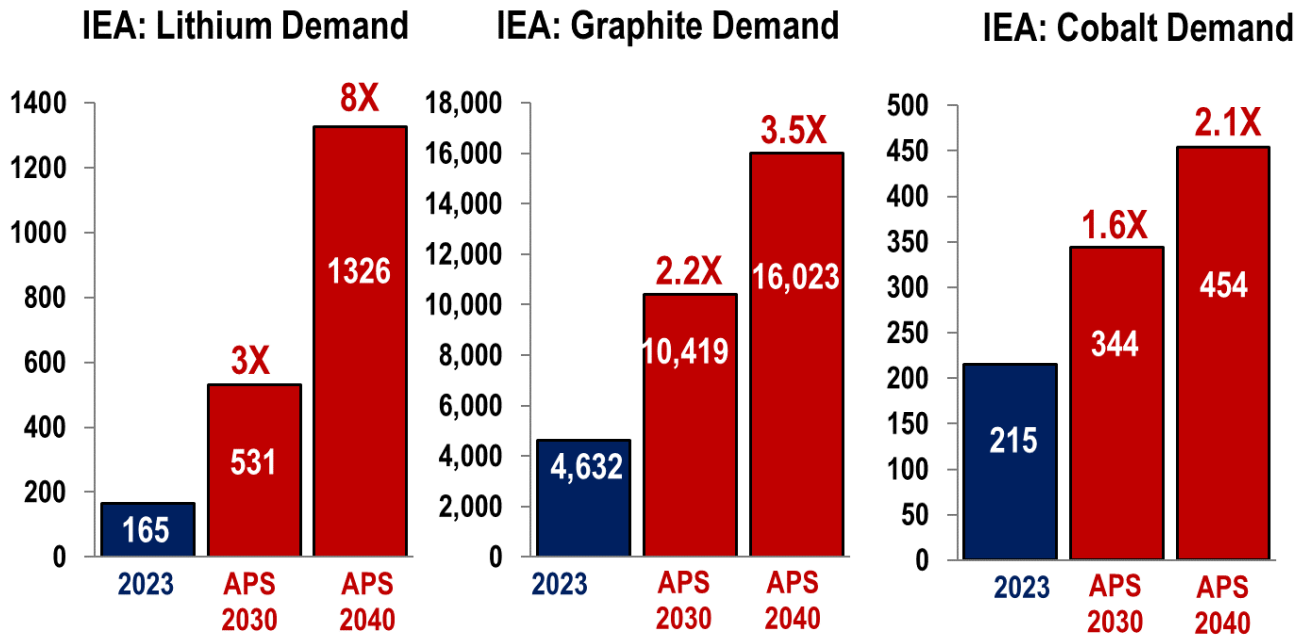


- **\$13.9 billion investment**
- **Plant will manufacture batteries for HEVs, PHEVs, BEVs**
- **TBMNC scheduled to begin production in 2025**
- **Toyota plans to roll out 30 BEV models globally by 2030; 5 years after TBMNC production start**

# PACE OF TRANSITION WILL BE DETERMINED BY MARKET FACTORS

- Critical minerals, battery supply chain, charging infrastructure, vehicle affordability and utility ...

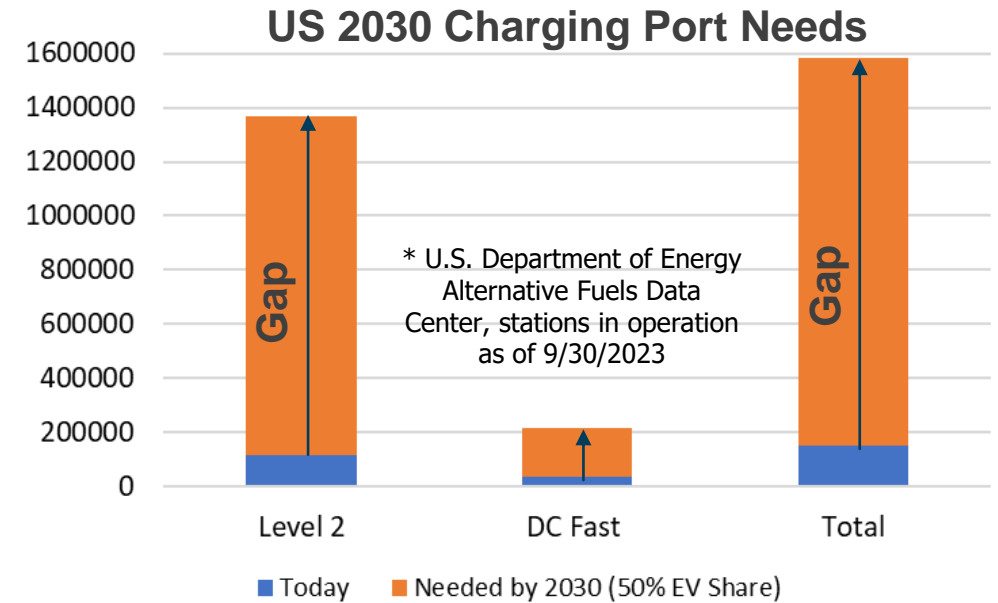
## Critical Minerals



(In kt)

Source: IEA Global Critical Minerals Outlook 2024

## Infrastructure



# TOYOTA MULTIPLE PATHWAY WORKSHOP – MAY 2024

## Subaru, Mazda, and Toyota Commit to New Engine Development for the Electrification Era; Toward Carbon Neutrality



Source: <https://global.toyota/en/newsroom/corporate/40850156.html>



**New 1.5L engine**  
**Optimized for the electrification era**  
**“Electric-Rich” HEVs/PHEVs that capture**  
**greater efficiency with electric power unit**

# TAKEAWAYS?

- Technology neutral performance standards
- Assess competing low carbon technologies using well-to-wheels analysis
  - Levels playing field for all powertrain technologies and enabling technologies to compete on carbon
  - **DO NOT** hold OEMs responsible for upstream emissions compliance
- Desired Outcome: Maintain consumer choice while achieving intended CO2 reductions

## ENERGY PREDICTIONS AND PLANNING FOR THE FUTURE

(Oil price forecasters) “...have had only marginally better success than those who foretell the advent of earthquakes or the second coming of the Messiah.”

*-Ambassador James E. Akins  
Council on Foreign Relations essay*

“...plans are useless but planning is indispensable...”

*-Dwight Eisenhower*

*“If we are serious (about climate change), we need all technologies which can help to reduce emissions even 1 gram – we don’t have the luxury to exclude any technologies.”*

*-Fatih Birol  
IEA Exec. Director*

**THANK YOU**