Ballard Capital Markets Day 2023

Nasdaq & TSX: BLDP

June 13, 2023

Introduction

Kate Charlton, VP Corporate Finance & Strategy

Forward Looking Statements

This document contains forward-looking statements concerning anticipated markets and customers for our products, revenue and margin expansion, operating costs, implementation of government policy initiatives, planned manufacturing capacity expansion, product cost reduction activities and planned investments. These forward-looking statements reflect Ballard's current expectations as contemplated under section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Any such statements are based on Ballard's assumptions relating to its financial forecasts and expectations regarding its product development efforts, manufacturing capacity, and market demand. For a detailed discussion of the factors and assumptions that these statements are based upon, and factors that could cause our actual results or outcomes to differ materially, please refer to Ballard's most recent management's discussion & analysis.

Other risks and uncertainties that may cause Ballard's actual results to be materially different include general economic and regulatory changes, detrimental reliance on third parties, successfully achieving our business plans and achieving and sustaining profitability. For a detailed discussion of these and other risk factors that could affect Ballard's future performance, please refer to Ballard's most recent Annual Information Form. These forward-looking statements are provided to enable external stakeholders to understand Ballard's expectations as at the date of this document and may not be appropriate for other purposes. Readers should not place undue reliance on these statements and Ballard assumes no obligation to update or release any revisions to them, other than as required under applicable legislation.

BALLARD™

Agenda

1. Opening Remarks
2. Commercial Update
3. TCU
4. Technology Development & Cost Reduction (Stack)
5. Technology Development & Cost Reduction (Module)
6. Global Manufacturing
7. People, Culture & ESG
8. Financial Outlook
9. Closing Remarks

Opening Remarks

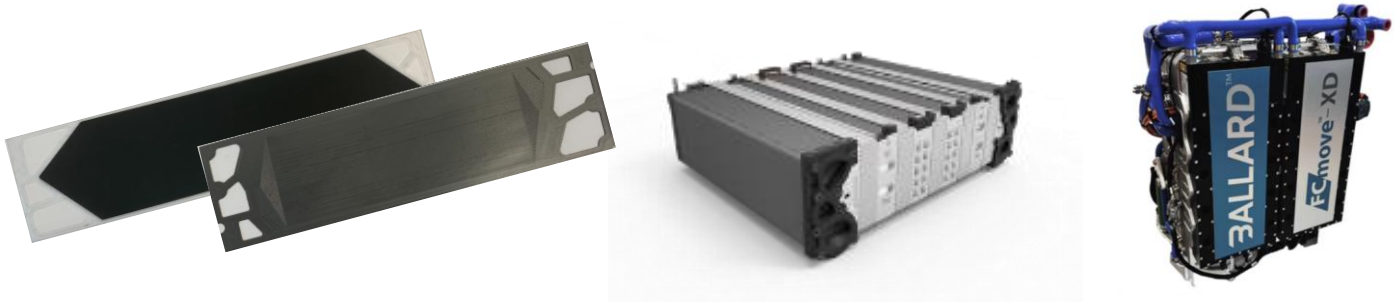
Randy MacEwen, President & CEO

Recent milestones – 30 years

- **June 8th, 1993** – Ballard debuted world's first fuel cell bus
- **June 9th, 1993** – Ballard listed on the TSX

Ballard's business model[1]

Core fuel cell MEA, bipolar plates, stack & module IP developed over 40+ years



Leveraged over six medium & heavy-duty end markets

Driving scale & efficiency across key markets in Europe, North America & China leading to cost advantages, gross margin expansion & EBITDA growth with volume scale

1 See Slide Notes

Key Updates from 2020 Investor Day[1]

2020 – Key Priorities	2023 – Status Update
Expand & execute on partnerships	Significantly increased number of customer platform wins & supplier partnerships
Develop new stacks & modules	Launched 8th & 9th generation modules w/ next gen stacks; 10th generation module w/ HPS stack launching in 2023
Drive product cost reduction	On track with stack cost reduction program (3x3)
Invest in advanced mfg & capacity expansion	Installed MEA & process improvement at facilities in Canada, commissioned WBJV in China, FCwave in Denmark & established Oregon facility
Drive improved financial performance	Delayed China demand materially impacted growth & masked underlying strength in PP in EU & NA; GM pressures and increased investments in T&PD and AM

Ballard has been working with customers & partners to accelerate fuel cell adoption, while investing in technology and product development, cost down initiatives, and capacity expansion

1 See Slide Notes

BALLARD™

Increasingly Constructive Policy Context[1]

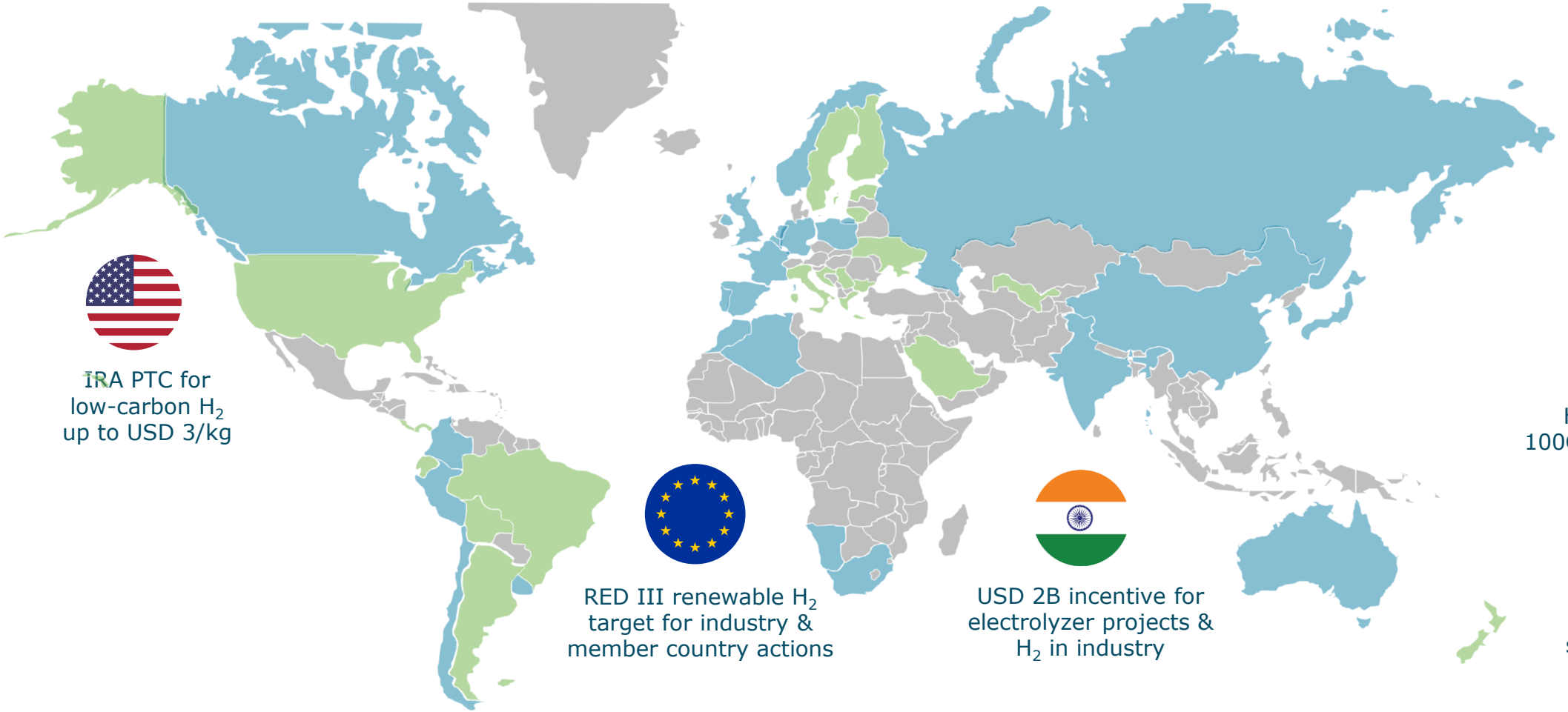
30 countries with national strategies (23 more proposed)

100-200 B USD in dedicated H_2 funding

>160 GW deployment by 2030 in policy targets

Adopted national H_2 strategy

Announced national H_2 strategy



IRA PTC for low-carbon H_2 up to USD 3/kg

RED III renewable H_2 target for industry & member country actions

USD 2B incentive for electrolyzer projects & H_2 in industry

USD 15B Green Innovation Fund with H_2 CfDs

H_2 alliance goal of 100GW installed by 2030

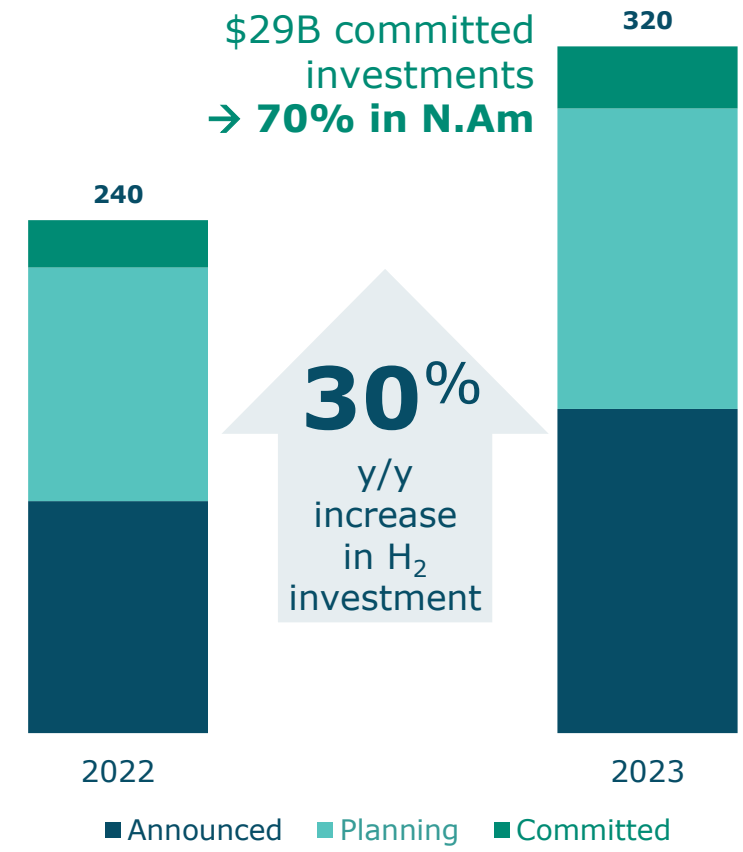
USD 1.5B to support H_2 export

1 See Slide Notes

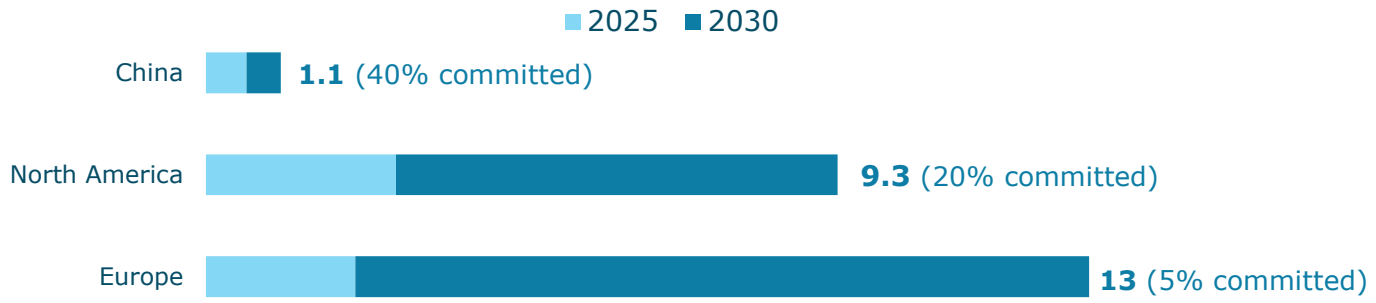
BALLARD™

Evolving Landscape: H_2 production & availability[1]

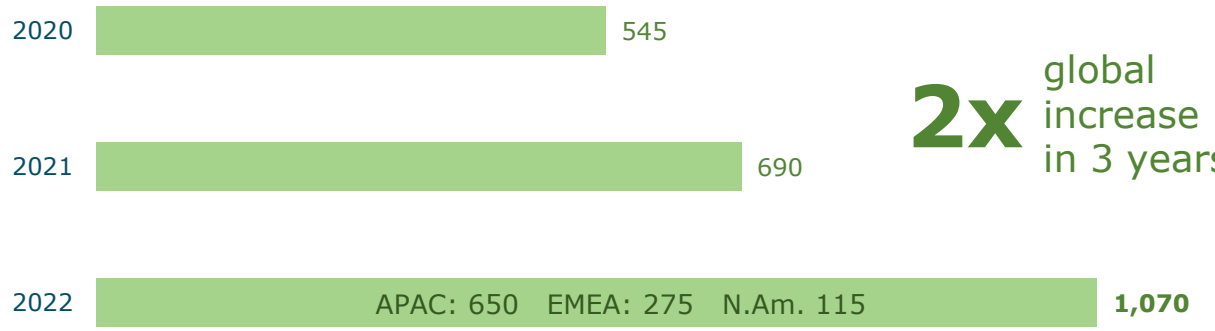
Announced H_2 Investments (US$B)



Announced Hydrogen Production Capacity (Mtpa)



Global Installed Hydrogen Refueling Stations (HRS)



Availability of low cost, low carbon hydrogen is on the way – a key unlock for fuel cell demand

1, 2 See Slide Notes

BALLARD™

Current state of the hydrogen and fuel cell industry

Growth indicators

- Increasingly favorable H_2 policy landscape
- Consensus view where fuel cells offer the highest value: HD mobility → Ballard's markets
- Fuel cell validation with growing field deployments (80k FC vehicles)
- Strong interest from end-users (fleet operators) driven by ESG
- Deeper pools of capital being attracted to H_2 and FC market opportunities
- Investments in capacity across the value chain

Risk indicators

- Significant complexity for the transition to a new energy system
- Current limited availability of low-cost, low-carbon hydrogen and HRS
- Limited number of vehicle platforms
- Challenges with scaling, including matching supply and demand

US Market Update & Strategy

Growth indicators

- Robust federal policy support for low-carbon H_2 production, including IRA PTCs
- Highest level of committed H_2 production investments
- Strong support for domestic fuel cell manufacturing
- Aggressive state-level policies for HD vehicle decarbonization (ACT & ACF)
- Increased realization of difficulty in scaling BEV fleets due to grid limitations / timelines

Risk indicators

- Federal agency implementation of IRA is incomplete, with some H_2 rules still in-progress
- Increased cost of capital pressuring decarbonization solutions with high up-front costs
- Strong interest in bridge technologies such as biofuels, renewable diesel, etc.

European Market Update & Strategy

Growth indicators

- Comprehensive commitments to decarbonize transportation and eliminate fossil fuel imports, including in marine
- First region to translate H_2 policy into funds flowing to project developers
- EU-level agreement on green H_2 definition expected to unlock power investments for electrolysis
- Policy support across production and distribution portions of H_2 value chain, including AFIR, which is expected to translate into 650 new HRS for HD trucking

Risk indicators

- Implementation of policy from EU-level to Member States lacks clarity vs. US
- Large sections of EU's economy relate to the production of ICE vehicles
- Divergent interests of EU Members states re: power generation, funding available to decarbonize, and appetite to invest in domestic energy production
- Lowest level of committed investments relative to announced investments

China Market Update & Strategy

Growth indicators

- Strategic importance of energy security and addressing GHG emissions
- Massive investment in renewables
- Significant investments in electrolyzers and low carbon hydrogen production
- Fuel cell supply chain is developing & material costs are coming down
- China continues to have the most ambitious fuel cell vehicle & H_2 production targets; 1m FCEVs (HD truck and bus) and 1,000 HRS by 2030
- National level policy supported by local governments and SOEs

Risk indicators

- Geopolitical tension at highest level in decades
- Local governments are cash constrained post-COVID
- No clear indicators of step change in fuel cell demand in next 2-3 years due to H_2 supply challenges, refuelling stations, storage tank regulations, & local government FCEV funding
- Highly competitive fuel cell market with new entrants expected to increase; intense fight for market share leading to crimped profitability
- High level of policy uncertainty

Where is Ballard going & what to expect[1]

New customer platforms in key verticals & customers maturing in fuel cell adoption

Increasing product driven revenue as fuel cell adoption scales

Product design evolution, advanced manufacturing, & volume scale

Top line revenue growth, achieving cost down targets & economies of scale

1 See Slide Notes

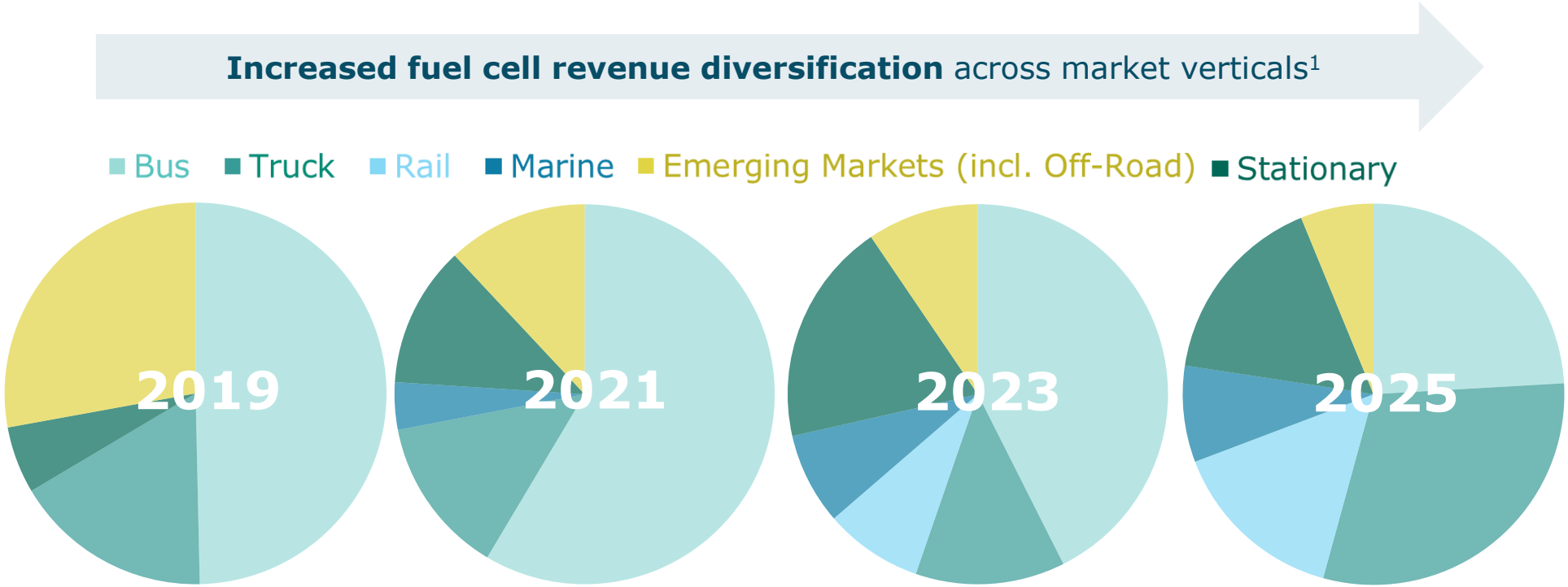
BALLARD™

Commercial Update

David Mucciacciaro, CCO

Power Products revenue mix by vertical[1]

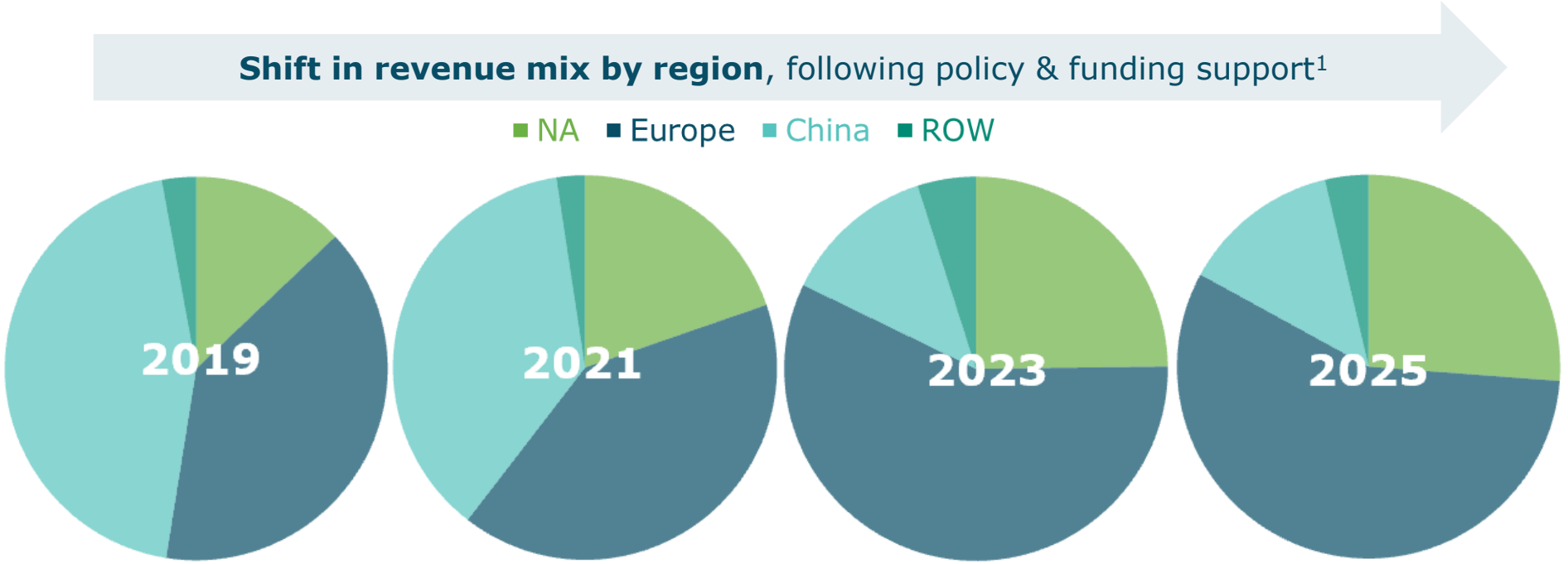
- Change in revenue segmentation to better highlight market adoption & customer evolution
- **Increasing revenue diversification** in recent years & expected to continue
- Illustrates business model resilience by leveraging core technology across multiple markets



1 See Slide Notes

Regional shift in revenue following policy movement[1]

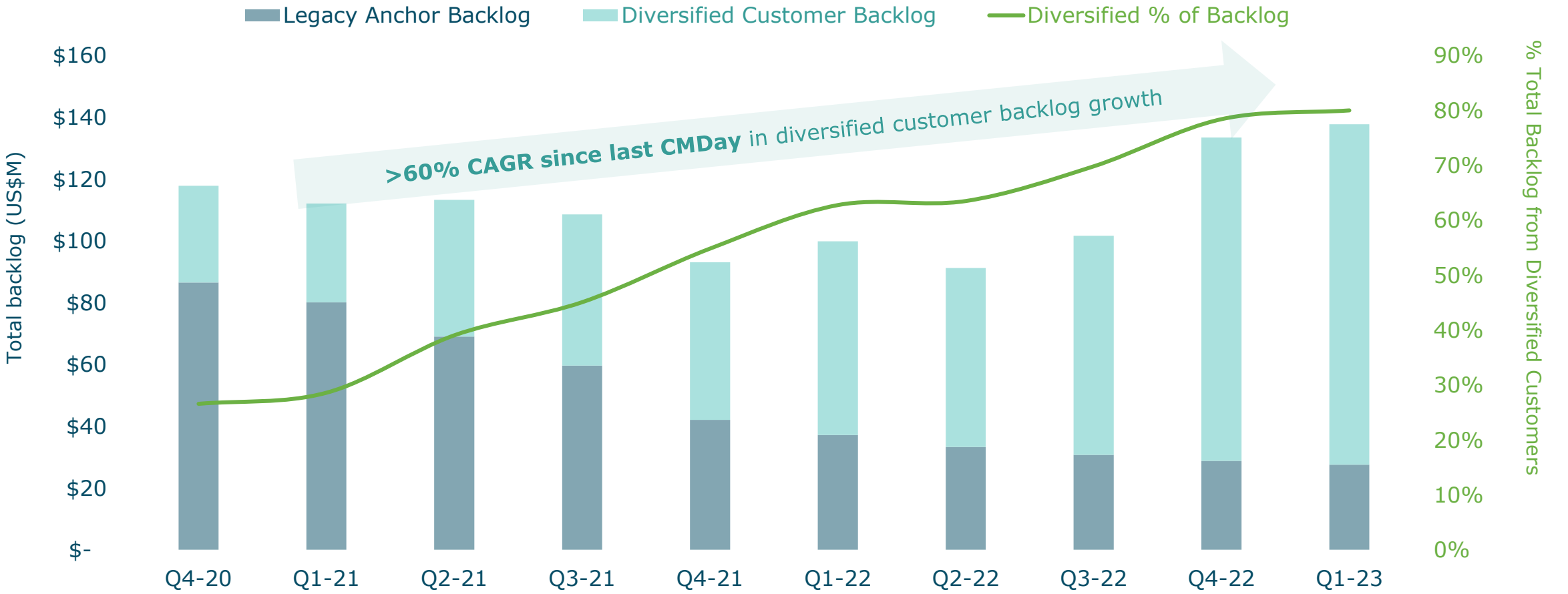
- Multi year **shift in geographic revenue mix** expected to continue in near to mid-term
- Policy support & zero emissions targets driving significant European & North American growth
- Challenging subsidy schemes have throttled fuel cell demand in China



1 See Slide Notes

Backlog shows shift to more diverse customer base[1]

- In two years, Ballard has more than doubled its diversified customer backlog
- **Substantially diversified backlog to drive results** going forward

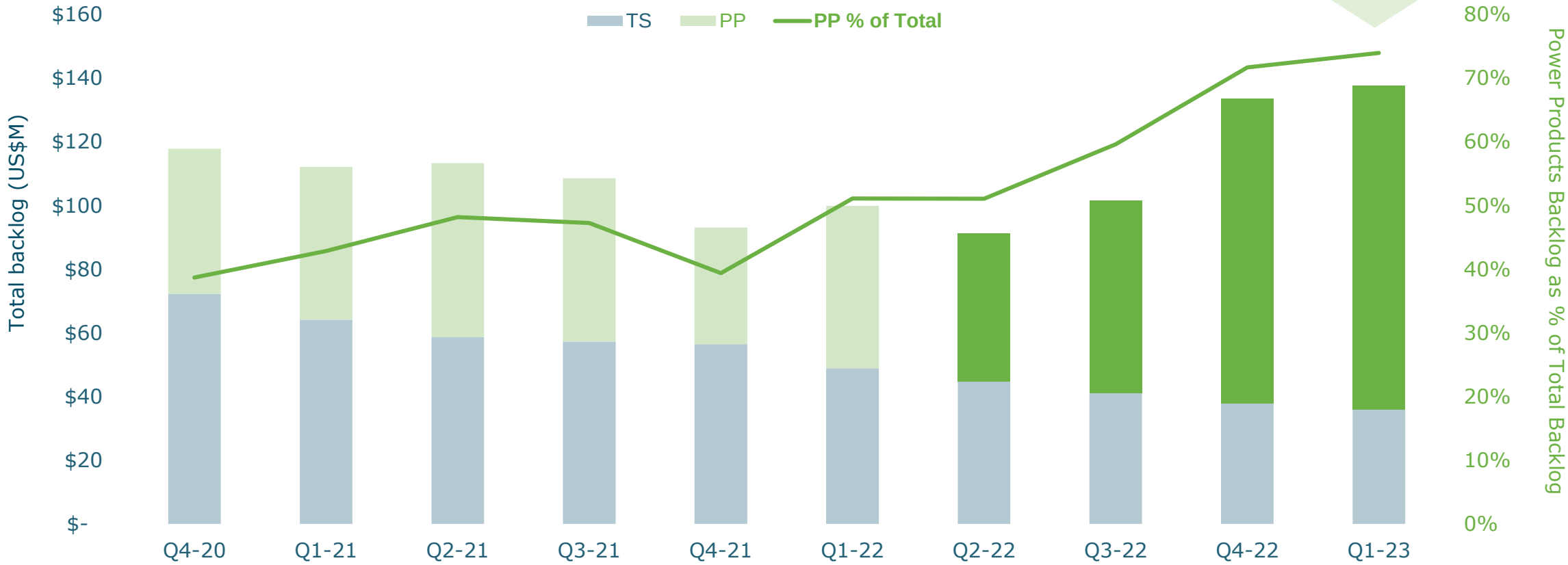


1 See Slide Notes

Backlog growth highlights shift in fuel cell demand[1]

- Power Products backlog has more than doubled since end of Q1’22
- **Large TS contracts** have historically supported the backlog & **masked shift in fuel cell demand growth over past 18 months**

Power Products account for **~75% of total corporate backlog**



1 See Slide Notes

Ballard's 3D Approach to Customer Platforms

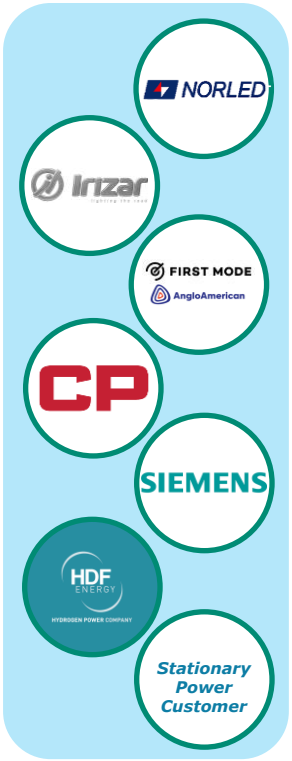
- Customers develop vehicle platforms for serial production around specific components, including a fuel cell
- Once a platform is developed, OEMs need to re-engineer platforms to switch parts, such as a fuel cell
- **By supporting customers at the platform development phase, Ballard positions itself as a highly-integrated partner for volume production of fuel cell vehicles**[1]

	Developing	Demonstrating	Deploying
Fuel Cell platform maturity	Low	Medium	High
Level of FC integration in platform	Low	Medium	High
Duration	~0 – 12 months	~1 – 5 years	~5 years+
Qty FC ordered	Single digits	Double digits	Triple digits +
BLDP Gross Margin expectation	Zero – Low	Medium	High

Platform development is a multi-year effort for Ballard & customers

1 See Slide Notes

Ballard's 3D Customer Platforms: **2020**[1]



Developing

Demonstrating

Deploying

1 See Slide Notes

BALLARD™

Ballard's 3D Customer Platforms: **Today**[1]

Developing

Demonstrating

Deploying

New customer platform after 2020

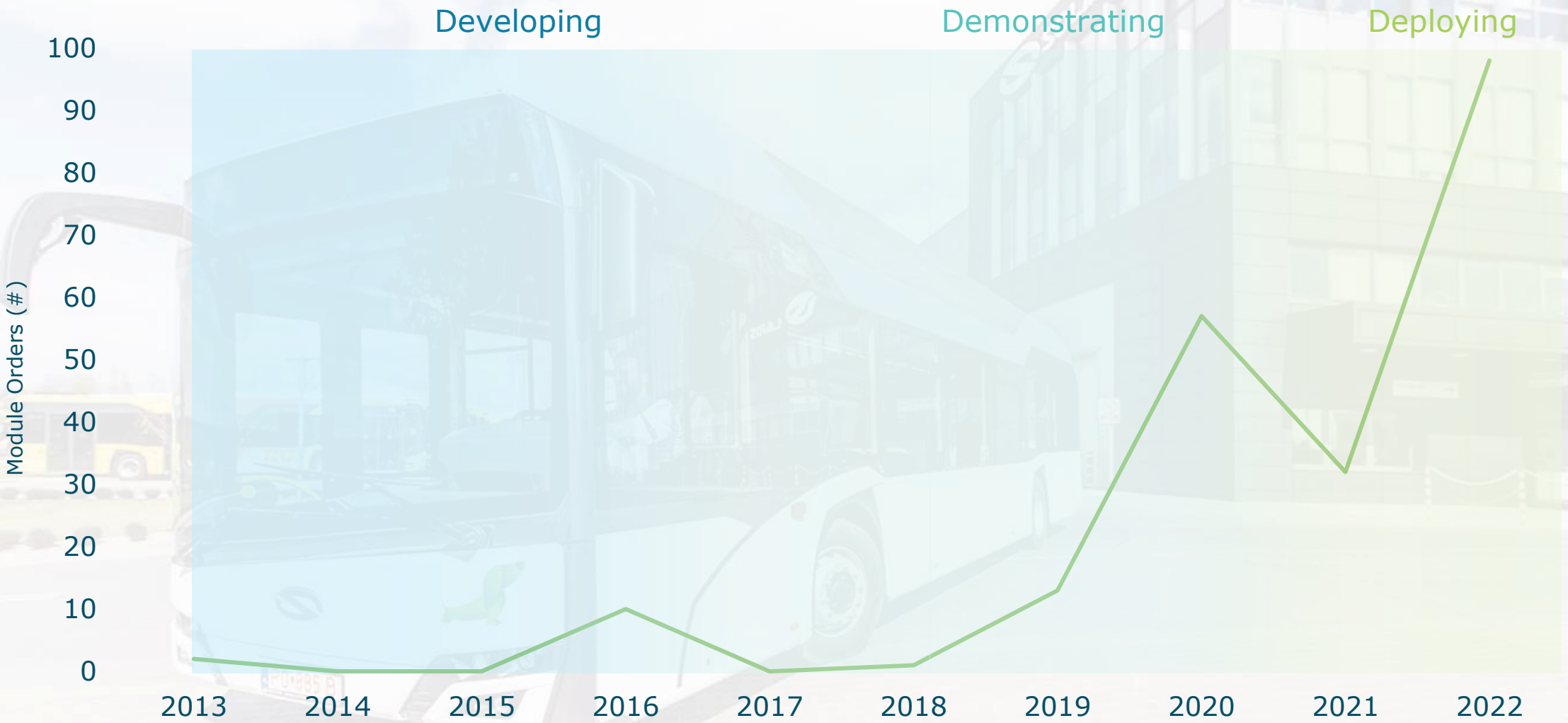
Existing platform in 2020

1 See Slide Notes

BALLARD™

Ballard's 3D Evolution: **Solaris**[1] (Bus)

1x70-100kW Module per bus



1 See Slide Notes

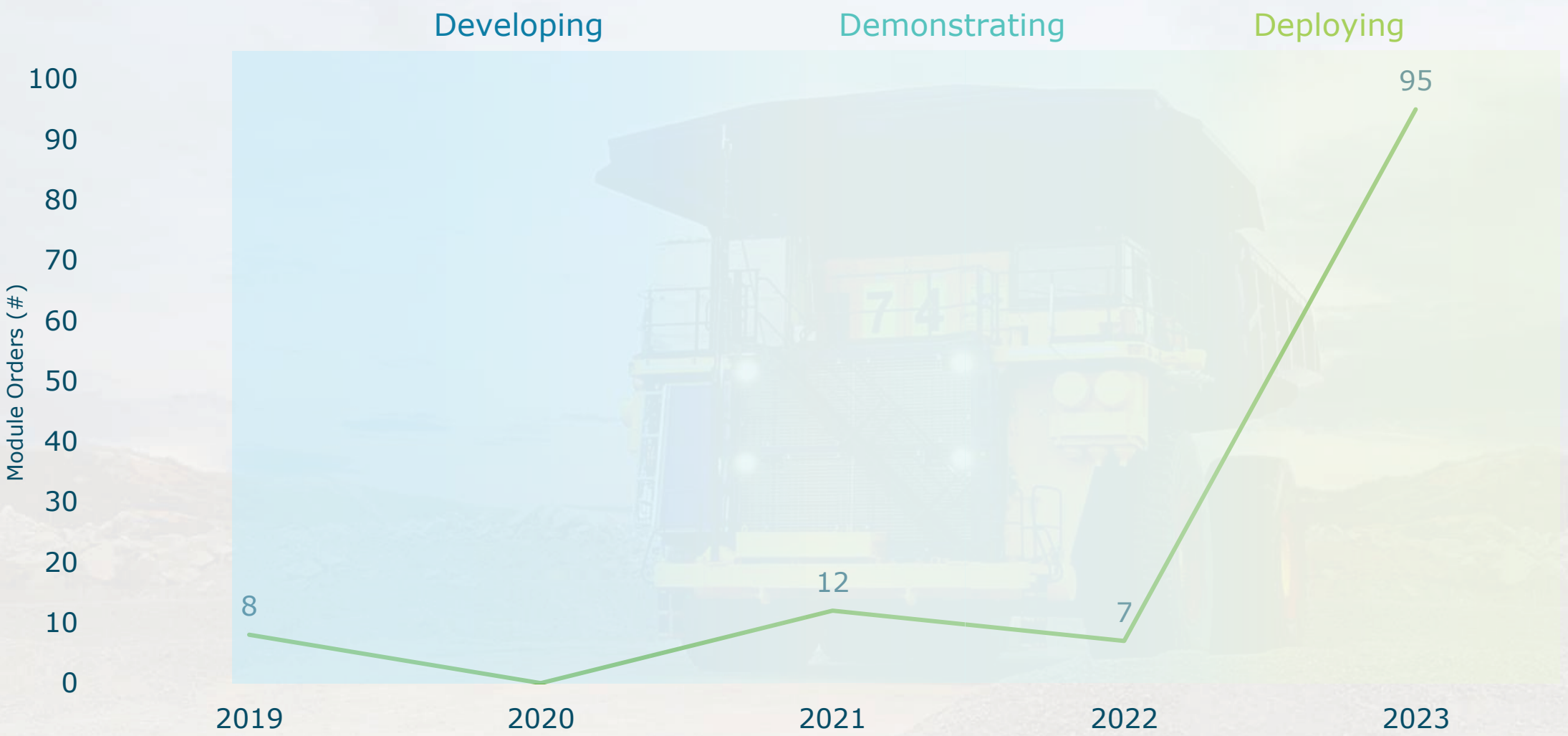
Ballard's 3D Evolution: **Siemens**[1] (Rail)

2x200kW Module per train

1 See Slide Notes

Ballard's 3D Evolution: **Anglo American / First Mode**[1] (Off-road)

10x100kW Module per truck



1 See Slide Notes

BALLARD™

Ballard’s value proposition in key markets[1]

Any route, any time	No compromise heavy payloads	Long range high-speed travel	Marine type-approved product	Ultra-heavy payloads	Rapid time-to-power
Quick refueling	Long distance routes	Flexible operation	Modular flexible power solution	High operational capacity	Remote & off-grid locations
1:1 diesel replacement	Fast recharging	No catenary wire infrastructure	Long range & short refuelling	Steep grades	Resilient & scalable

1 See Slide Notes

BALLARD™

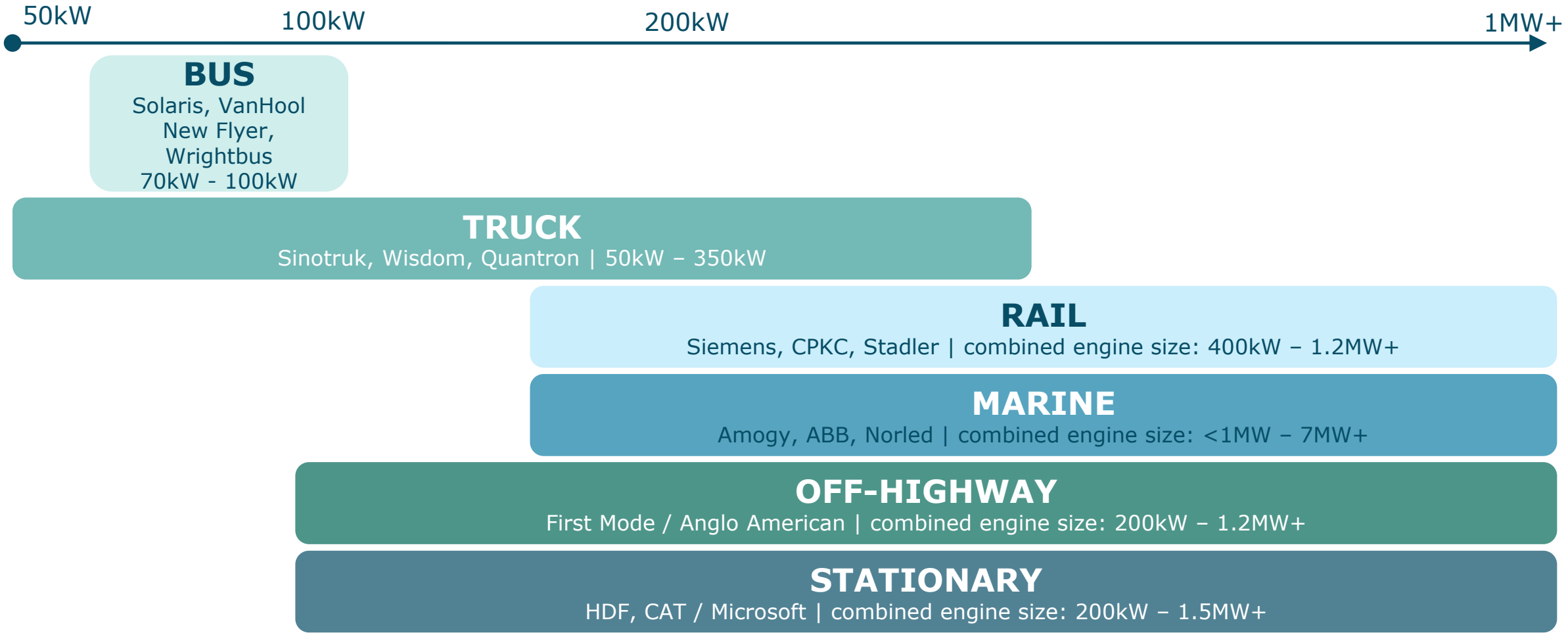
2030E Total Addressable Markets (TAM)[1,2,3,4,5]

	 BUS	 Truck	 Rail	 Marine	 Emerging Markets	 Stationary Power
Total Addressable Market ($B)	~$15	~$195	~$7 SAM*	~$40	~$50	–
Fuel Cell TAM 2030 ($B)	**~$2.0**	**~$7.5**	**~$0.2**	**~$0.4**	**~$1.5**	**~$4.0**
FC Adoption (2030e)	~10-15%	~2-5%	<5%	`<5%	<5%	–
FC Volumes (per year)	50k transit coach buses	LD Truck: 150k MHD Truck: 150k	550 passenger + freight trains	350 ships	25k off-road vehicles	4,100 MW
BLDP Market Share (2030e)	~15%	~10%	~40%	~20%	~10%	~15%
BLDP Market Share (2022e)	US >90% EU >70% China >25%	US ~10% EU ~10% China >30%	>40%	~50%	–	~30% (PEM only)

*SAM: Serviceable Addressable Market = zero / low emission market

1, 2, 3, 4, 5 See Slide Notes

Fuel Cell module size by market vertical[1]



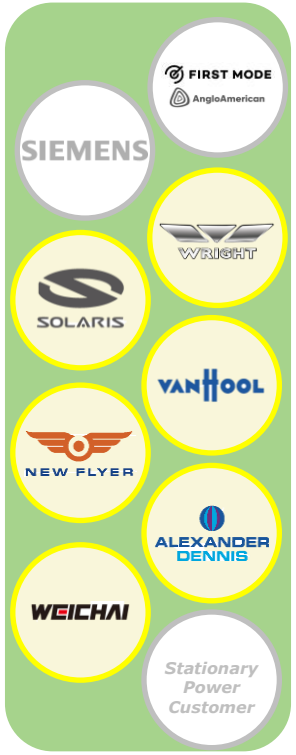
1 See Slide Notes

Bus Update[1]

- Added 7 new bus OEM partnerships
- Sales growth in EU & USA
  based on HD module
- Successful launch of new product (HD+)
- Strong market share
  EU: >70% & US: >90%

Developing

Demonstrating

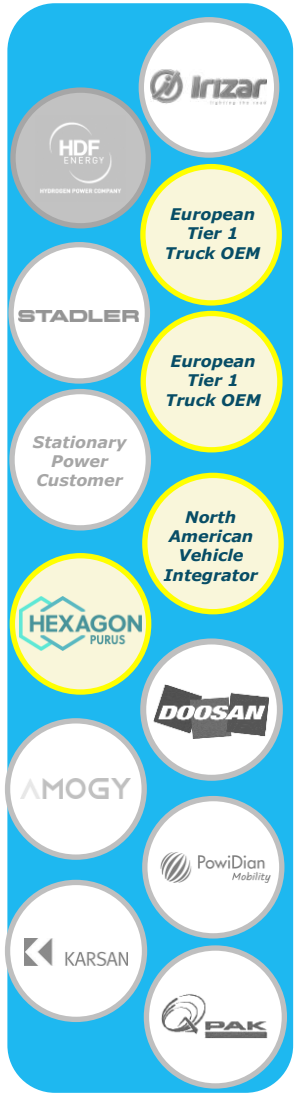


Deploying

1 See Slide Notes

Truck Update[1]

- Refined product & cost reduction strategy
- Technical competence recognized by industry & OEMs
- Recognized partner & supplier of FC module to OEMs & invitation to platform RFQs
- EU business with strong dynamics, growing order volume and OEM & integrator interest



Developing

Demonstrating

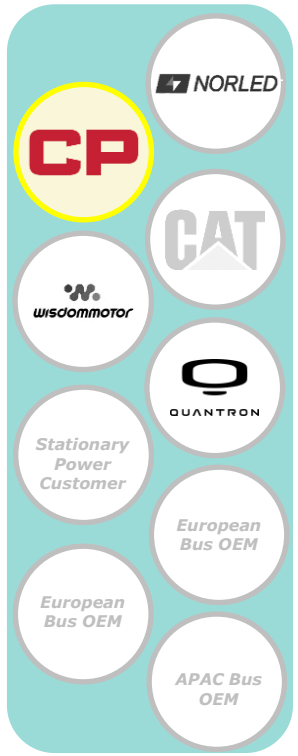
Deploying

1 See Slide Notes

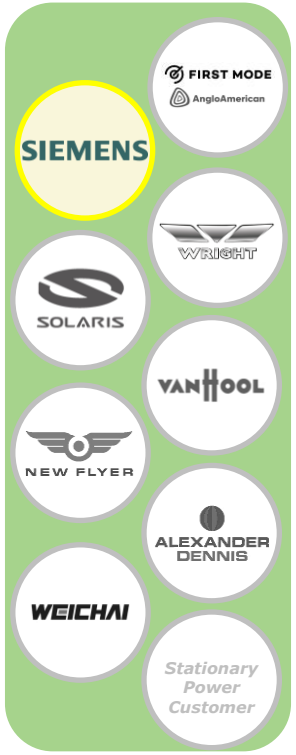
Rail Update[1]

- Significant expansion in CPKC project
- Growing interest from locomotive rail OEMs, integrators & end users
- ZEV mandate for California use-case locomotives starting in 2030

Developing



Demonstrating

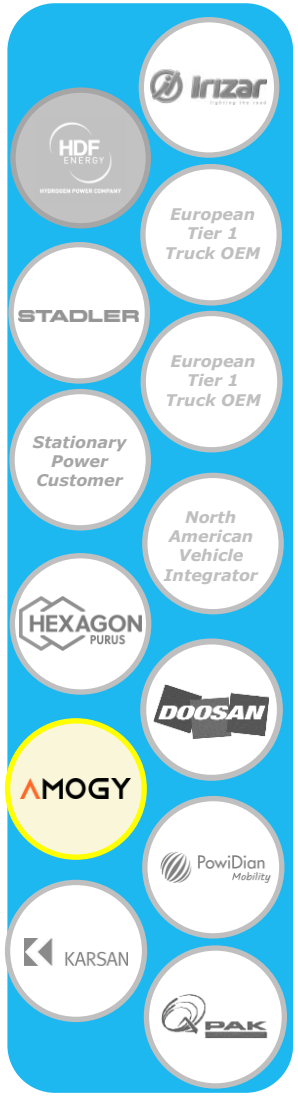


Deploying

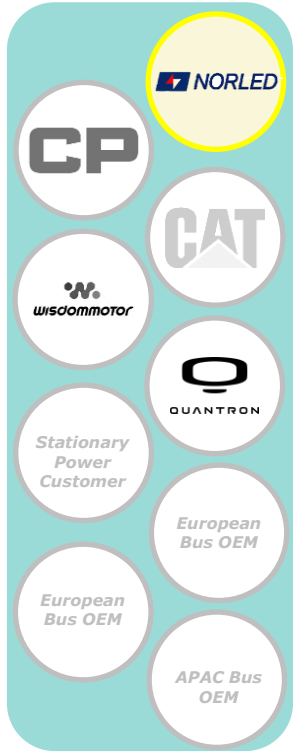
1 See Slide Notes

Marine Update[1]

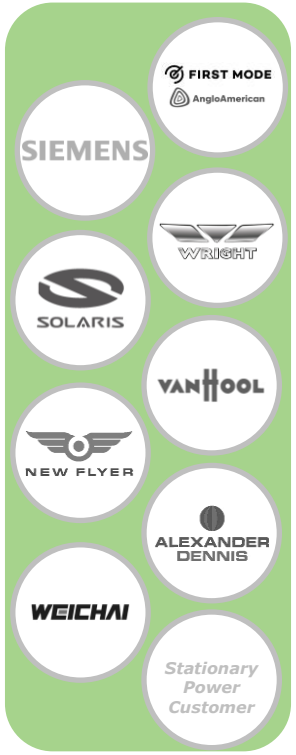
- World's first commercial ferry on PEM FC & liquid H2 operational in 2023
- World's first DNV Type Approval for FCwave 200kW in 2022
- Key project wins with Flagships, Norled, Future Proof Shipping & Amogy



Developing



Demonstrating



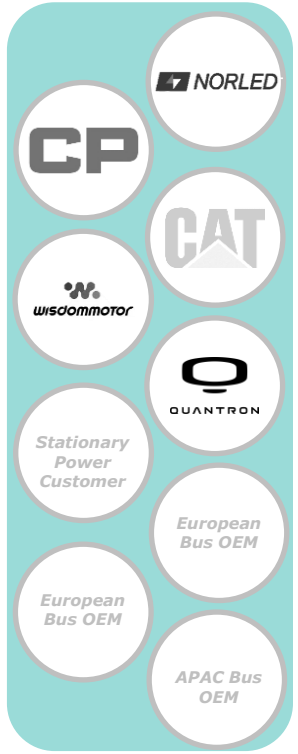
Deploying

1 See Slide Notes

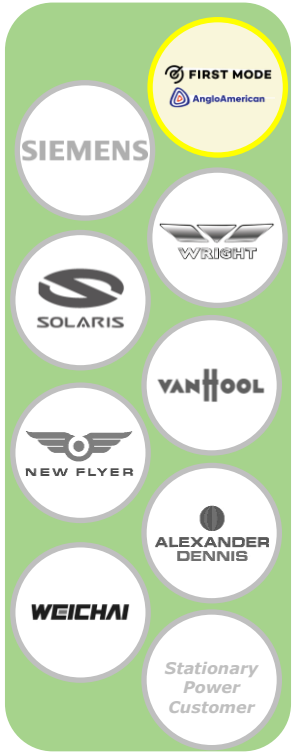
Emerging Markets Update[1]

- ~10MW modules ordered YTD from First Mode
- Developed first gen mining truck product for field deployment
- Kicked off demonstration projects with construction equipment OEMs & integrators

Developing



Demonstrating

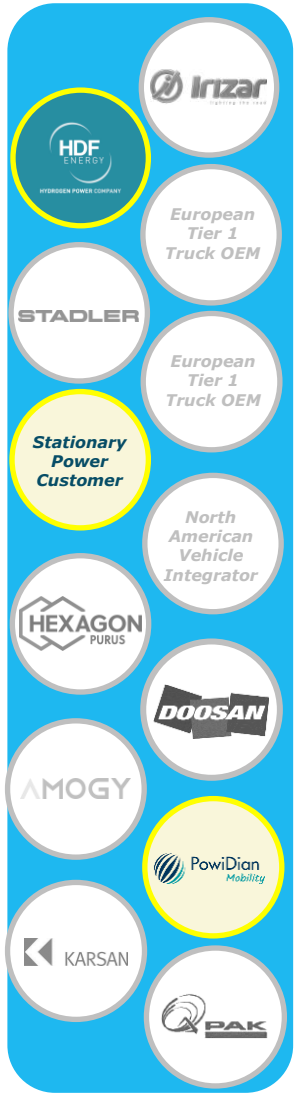


Deploying

1 See Slide Notes

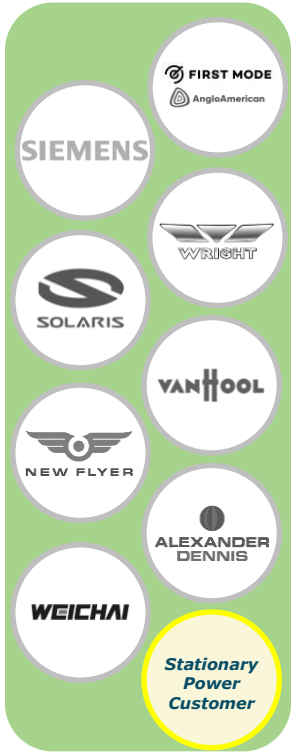
Stationary Power Update[1]

- Total of 15 MW orders won with scheduled delivery in 2022-2024
- FCgen 200 kW and MW container product launch
- Key project wins with Caterpillar, Microsoft, Vertiv, HDF, Shell, Fraunhofer & FMG



Developing

Demonstrating



Deploying

1 See Slide Notes

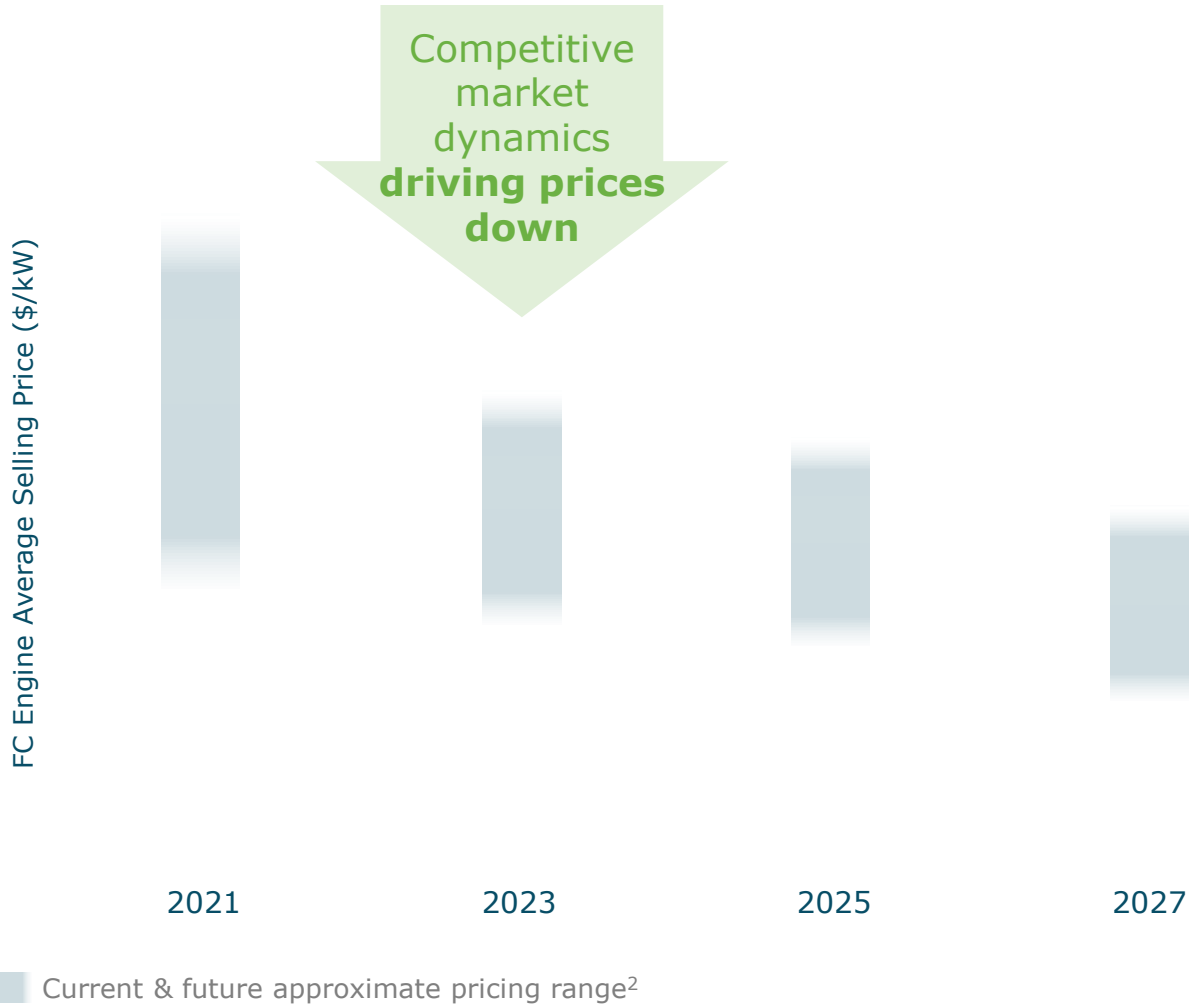
Competing Technologies (Long haul truck example)

	PEM Fuel Cells	Battery Electric	H_2 ICE
Range & payload comparable to diesel			
Zero emission			
Vehicle level TCO			
Broad range of available products			
CAPEX			
Scaled infrastructure availability			
Extreme climate performance			

1 See Slide Notes

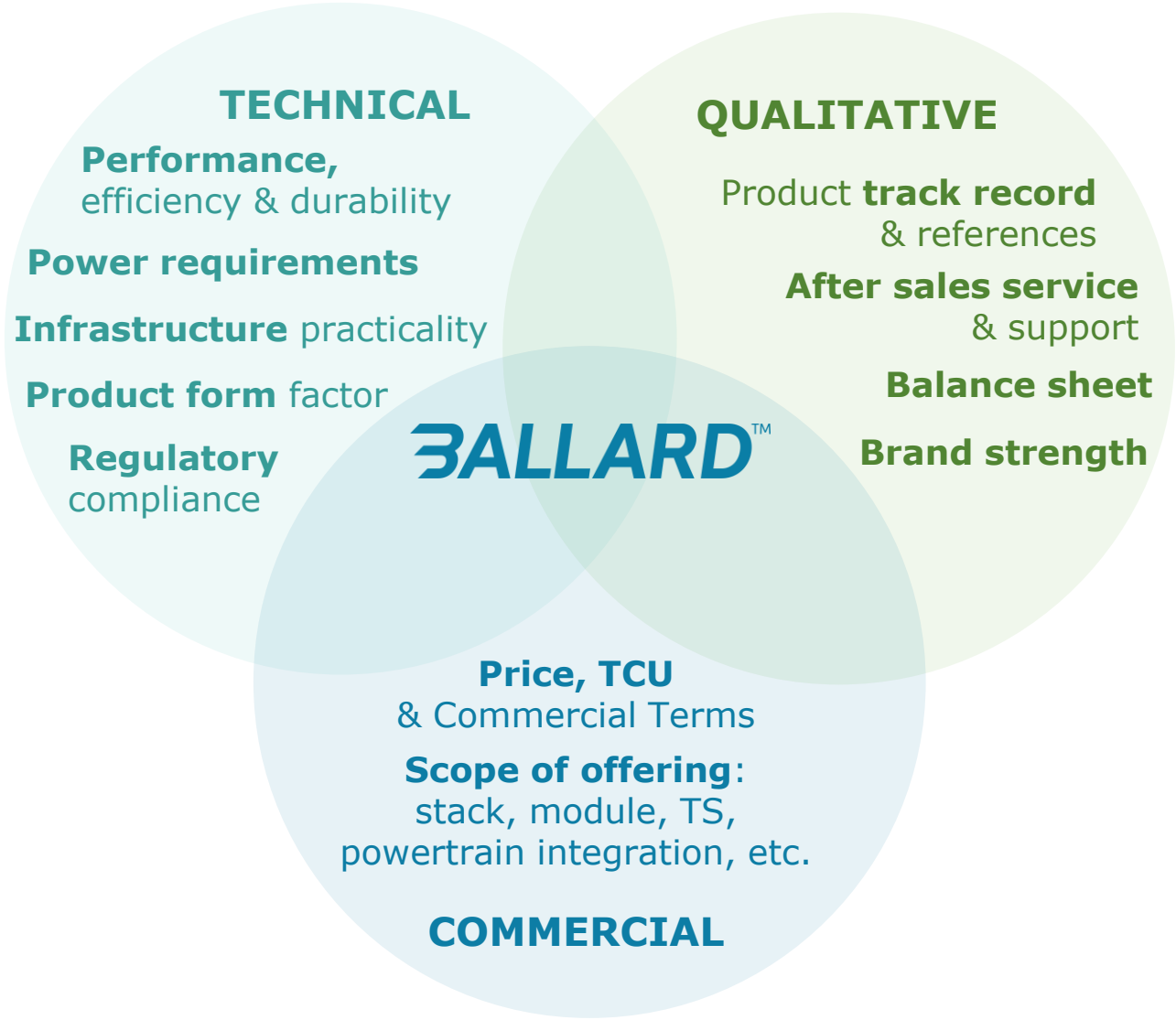
Competitive pricing dynamics[1]

- Strong pricing competition from OEMs & new market entrants
- ~30% market price reduction since 2021
- Tier 1s expected to launch demo product in low volume ~2025 – 2026 with scale production ~2027 – 2028



1, 2 See Slide Notes

Customer decision making criteria[1]



1 See Slide Notes

BALLARD™

TCU

Marc Niefer, VP Truck & Bus

What is TCO / TCU?

TCU
Total Cost of Use

Average total cost per kilometer driven over vehicle lifetime

Ballard's **multivariable model** developed to **quantify impact of evolving variables**

ex: technical improvements, costs, policy, commodity pricing, customer specific use cases

=

TCO
Total Cost of Ownership

- Vehicle Capital
- Driver Costs
- Tolls
- Fuel/energy costs
- Maintenance & repair
- Insurance
- Payload losses
- Infrastructure
- Etc.

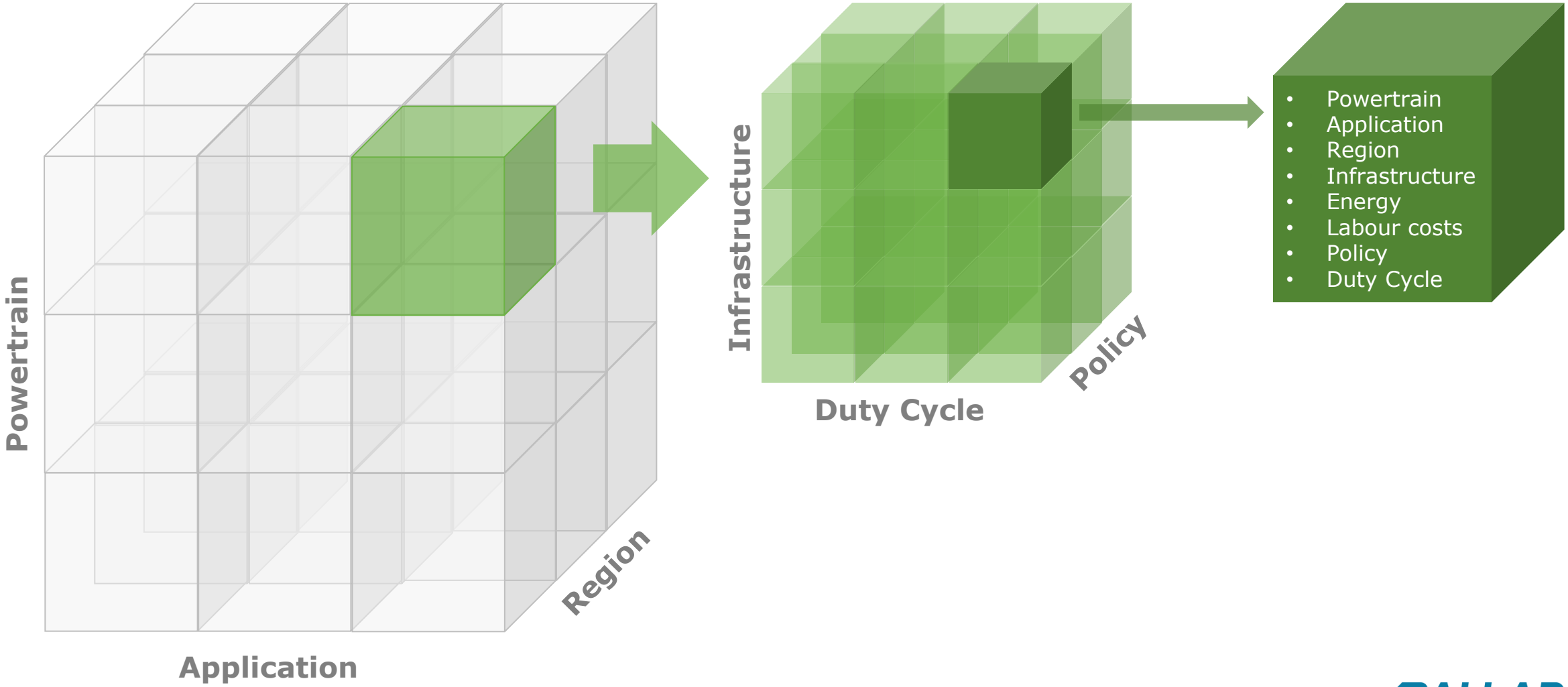
+

Use Case
Customer & Route Specific

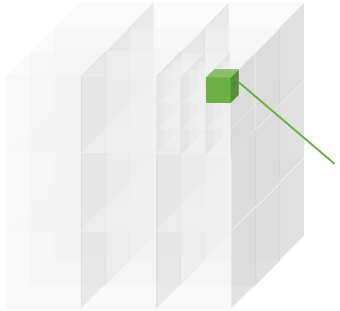
- Duty Cycle
- Temperature/Climate
- Refueling requirements
- Terrain

BALLARD™

TCU is Unique to each case



TCU Case Study[1]



Long-Haul Truck Fleet, Germany

- 100 Trucks
- Long-haul duty cycle (up to 800km)
- Heavy-duty truck (40t HGV)
- Germany
- 3rd party infrastructure *(FCEV & BEV)*
- Green hydrogen
- Policy impacts included[2]

Powertrains

ICE-Diesel

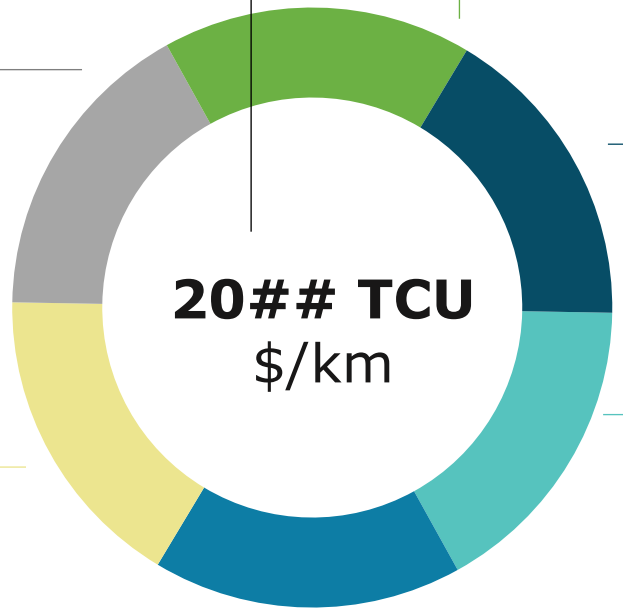
Battery-Electric

Ballard Fuel Cell

1, 2 See Slide Notes

Average Lifetime TCU Snap Shot

Output = Average Total Cost over lifetime of vehicle when purchased in year 20##



Other OPEX

Tolls

Insurance

Maintenance

Energy

Fuel: Diesel, hydrogen, electricity

Application cost

Refueling time

Downtime

Payload loss

Vehicle CAPEX

Base-vehicle & powertrain purchase price

Driver OPEX

Annual labor cost for driver

Infrastructure

Capital to build infrastructure for a fleet,

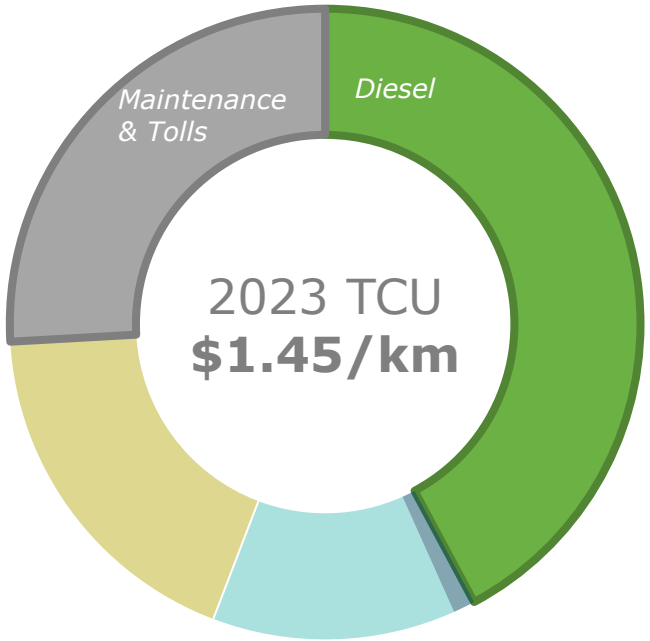
if not utilizing 100% 3rd party infrastructure

BALLARD™

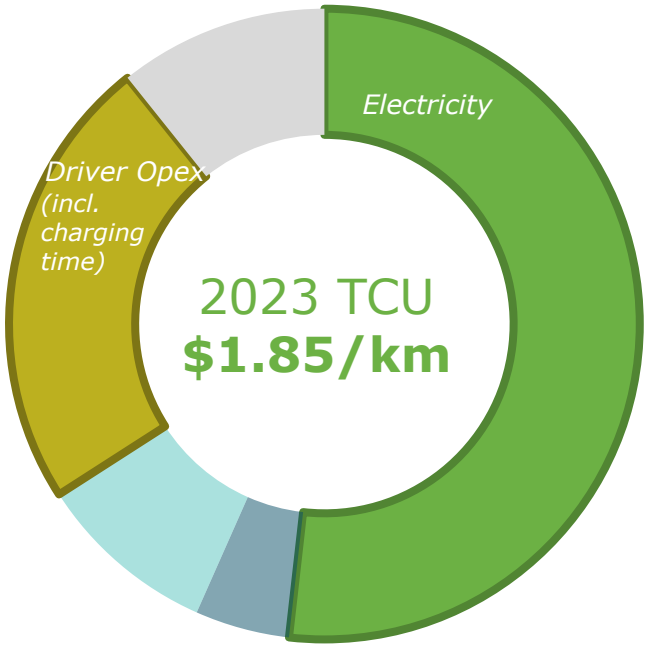
TCU Case Study: Long-Haul Truck Fleet, Germany[1,2]

100-vehicle Long-Haul truck fleet in Germany, 3rd party fueling infrastructure, policy support included, assumes diesel €1.80/L, electricity €0.40/kWh, green H_2 €13/kg in 2023, and €1.01 USD/EUR

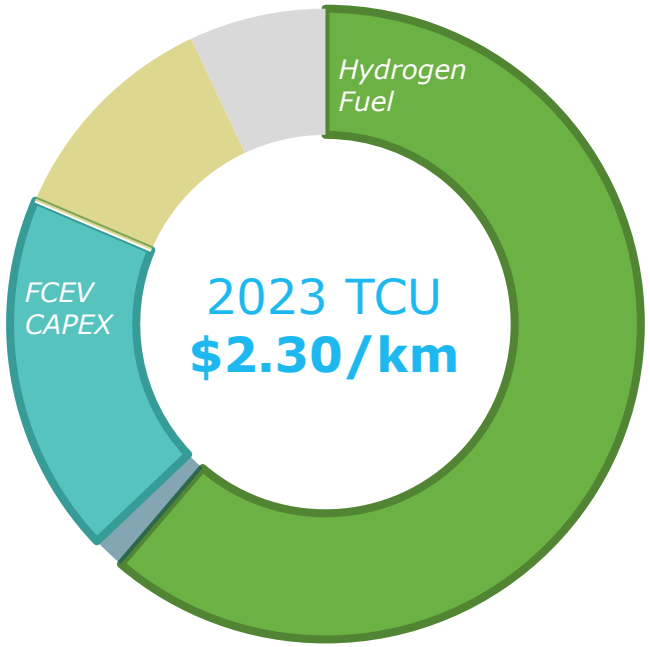
Energy | **Application Costs** | **Vehicle CAPEX** | **Infrastructure** (assumed 100% 3rd party for case study) | **Driver OPEX** | **Other OPEX**



ICE-Diesel



Battery-Electric



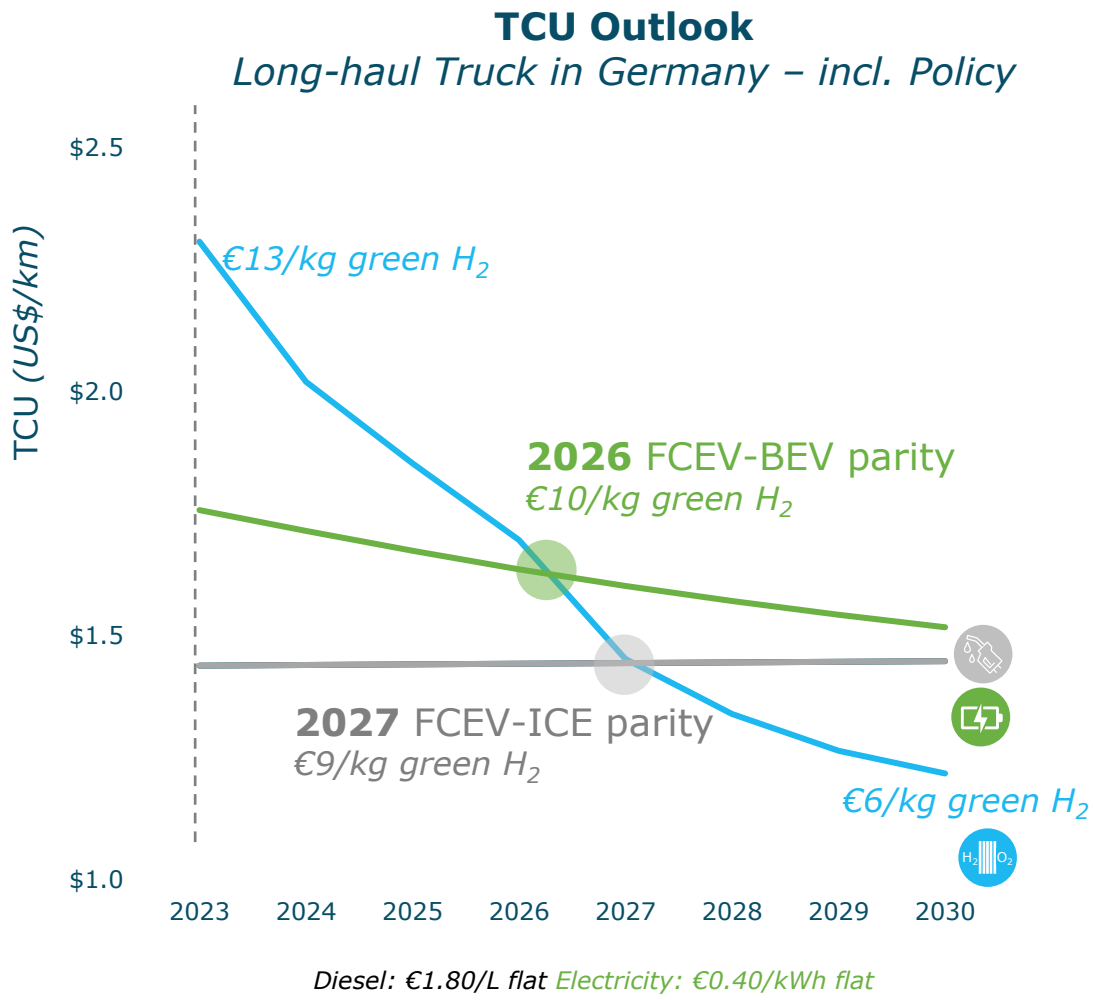
Ballard Fuel Cell

1, 2 See Slide Notes

TCU Case Study: Long-Haul Truck Fleet, Germany cont.[1,2]

- For long-haul trucks, in Germany, **FCEV / ICE parity** estimated in **2027**
- Primary drivers between 2023 to 2026 to achieve parity:
  - Improved **hydrogen pricing** accounts for **~2/3rd of TCU reduction** req'd to reach parity
  - Improved **fuel cell vehicle CAPEX** accounts for **~1/3rd of TCU reduction** req'd to reach parity

Heavily influenced & supported by policy

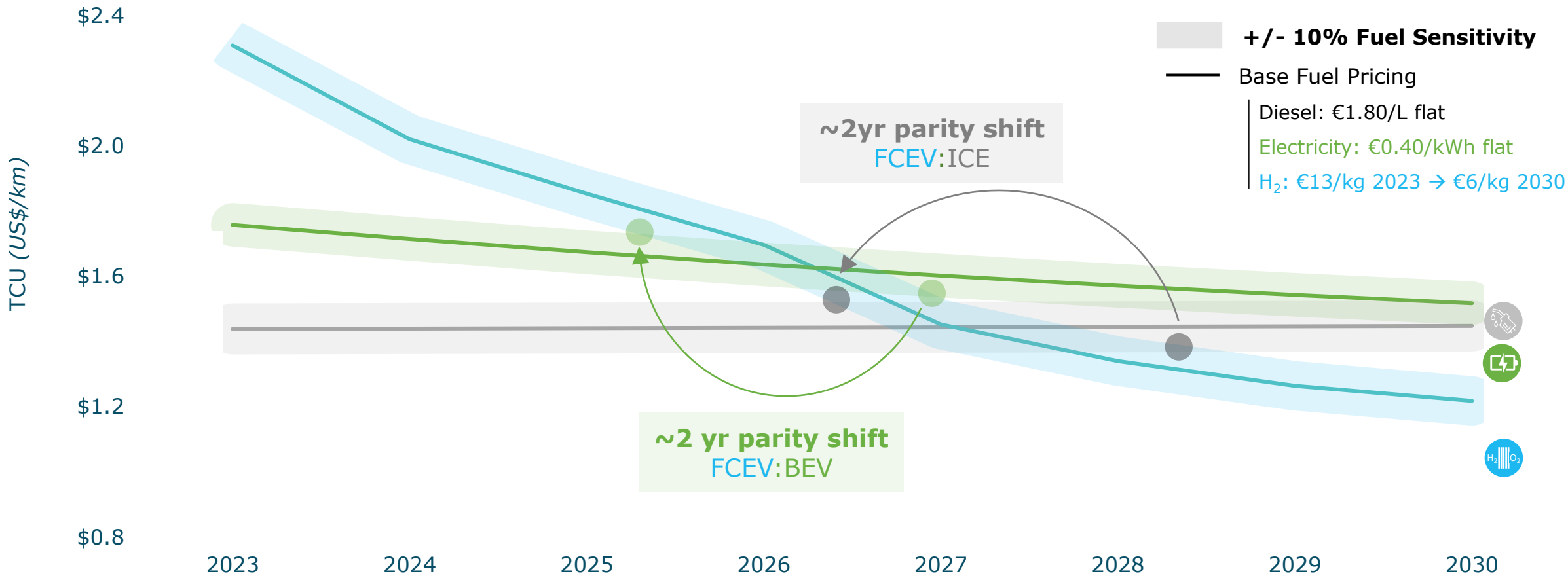


1, 2 See Slide Notes

TCU Case Study: Long-Haul Truck Fleet, Germany cont.[1,2]

TCU very sensitive to fuel pricing

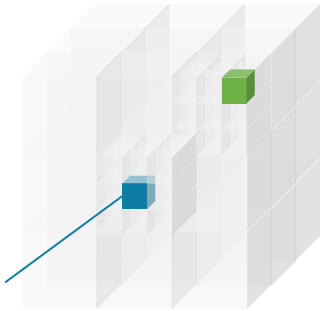
→ +/-10% change in fuel cost moves FCEV/ICE & FCEV/BEV parity 2yrs



1, 2 See Slide Notes

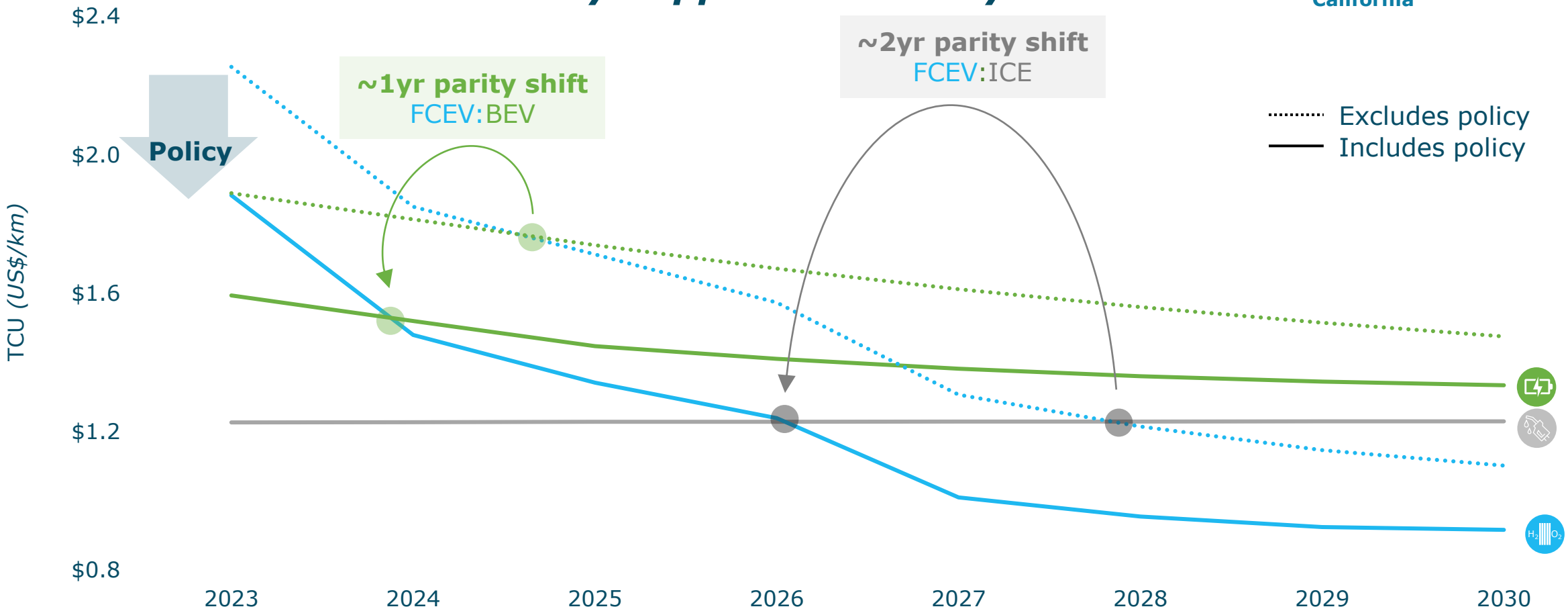
TCU Case Study: Long-Haul Truck Fleet, **California**[1,2]

100 Long-Haul Class 8 truck fleet in California, 3rd party fueling infrastructure, assumes diesel $1.25/L, electricity $0.17/kWh, & H_2 $8/kg[2] in 2023



Long-Haul Heavy-Duty Truck, California

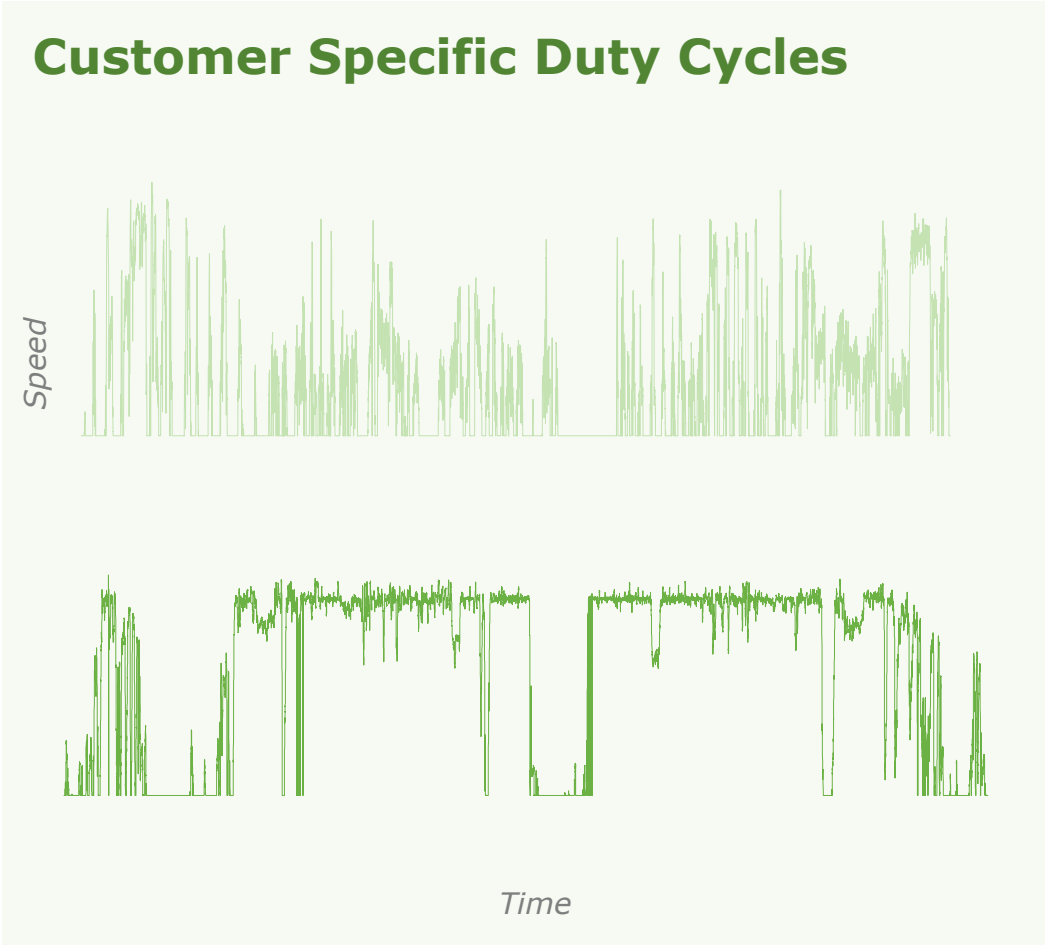
Policy Support Sensitivity[3]



1, 2, 3 See Slide Notes

BALLARD™

Leveraging TCU modeling at Ballard[1]



- Know your customers
- Optimize product development to benefit customer value proposition
- World class modeling capabilities
- Target competitive use cases to inform corporate prioritization

1 See Slide Notes

Technology Development & Cost Reduction - Stack

Dr. Kevin Colbow, CTO

Breaking down our products[1]

MEA
Heart of a Fuel Cell

Key Impacts
Reliability & performance

Future Development
Reduced catalyst loading
Improved efficiency

BPP
MEA's counterpart

Key Impacts
Power density,
durability & TCU

Future Development
Materials engineering,
manufacturing efficiency

Stack
Fuel Cell Powerhouse

Key Impacts
Size/fit, cost, durability

Future Development
Engineering design, power density,
advanced manufacturing

BOP
Turning a Stack into an engine

Key Impacts
Cost & manufacturing

Future Development
Standardization, engineering
design to reduce part count & size

Module
Fuel Cell Engine

Key Impacts
Efficiency, TCU, fit

Future Development
Standardization, engineering
design, adv. manufacturing, cost

▭ Revenue generating product
MEA: Membrane Electrode Assembly
BPP: Bipolar Plates
BOP: Balance of Plant

1 See Slide Notes

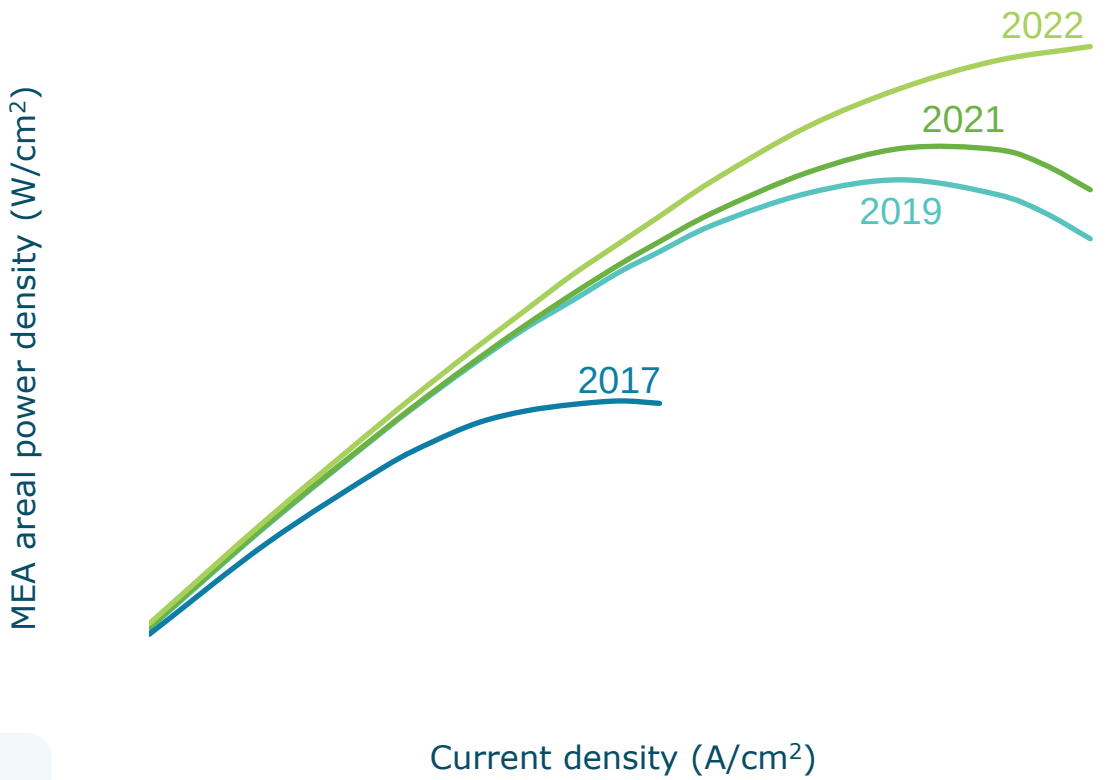
BALLARD™

MEA: leading performance

- **>40 years of MEA development**, Ballard has refined MEA technology, a core component of fuel cell stacks
- **Power density, fuel efficiency, durability, cost & catalyst loading** are critical qualities
- Continued R&D focused on high performance materials

~15% peak MEA areal power density increase
since 2019 (W/cm^2)[1]

MEA power density improvements[1]



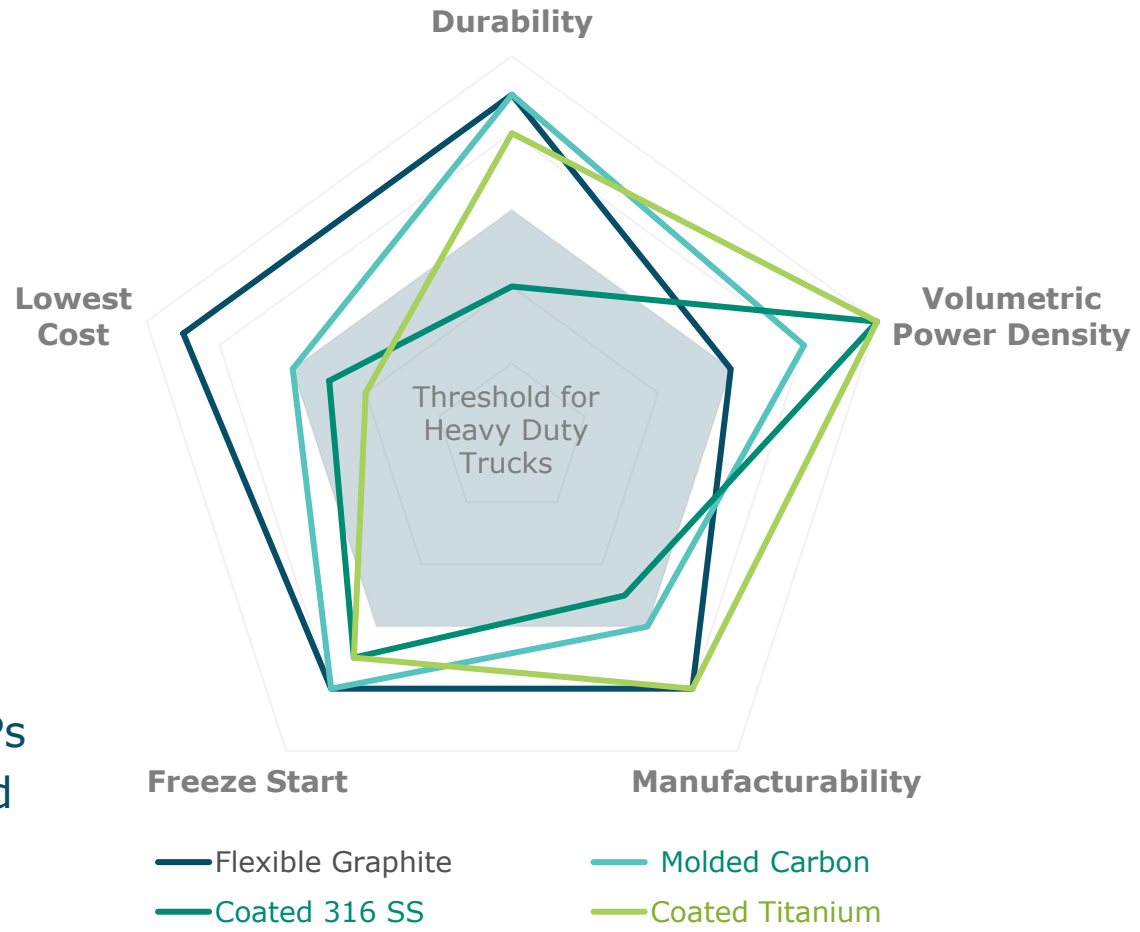
1 See Slide Notes

BALLARD™

Bipolar Plates (BPP): diverse technical experience & expertise[1]

- **BPP designed & manufactured in-house**, focused on optimizing durability & cost efficiency
- BPP base material on-going industry discussion → a single optimal plate material for all applications does not currently exist[1]
- **Two general bipolar plate material categories**:
  - carbon: flexible graphite, sheet molded plate
  - metal: coated stainless steel (SS) or titanium

  → Ballard has experience in both carbon & metal BPPs with promising candidates in both materials identified for future development[1]

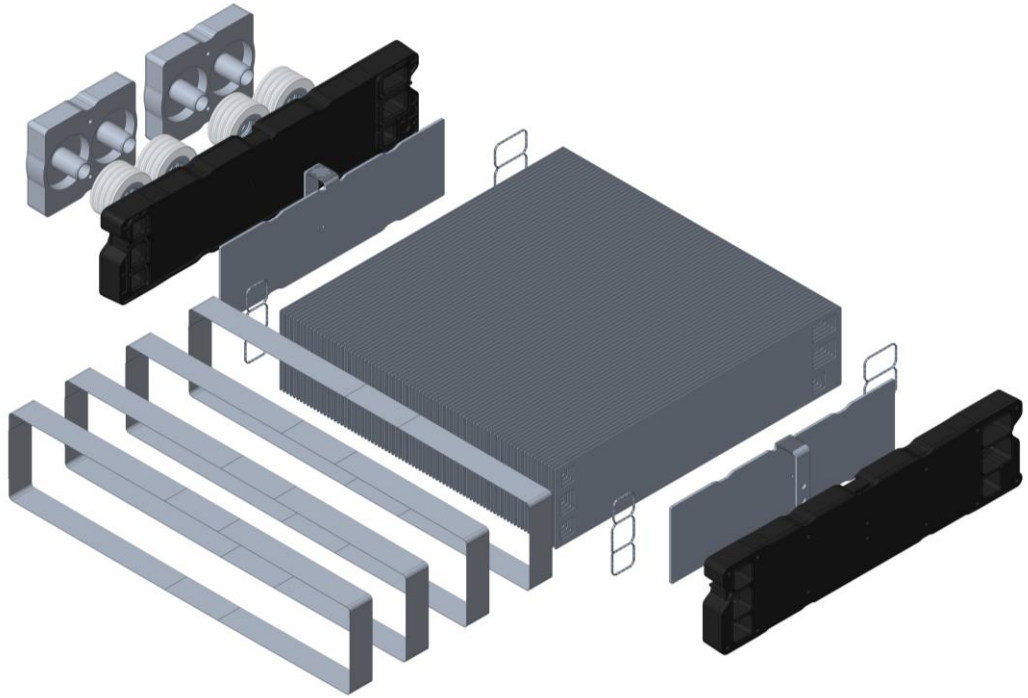


*Higher the score = better performing (i.e., strong cost score = lowest cost)

1 See Slide Notes

Stack: proven stack performance & technology[1]

- Stack: MEAs + Bipolar Plates + Hardware / Enclosure
- Ballard's commercial fuel cell stacks are fully validated in commercial applications with, **>670 MW products deployed** & **>150 million km in-service globally**[1]



Ballard fuel cell stacks are **durable**, **efficient**, & **proven** with proprietary MEA & BPP design

1 See Slide Notes

Update on 3x3 Stack Cost Reduction Program

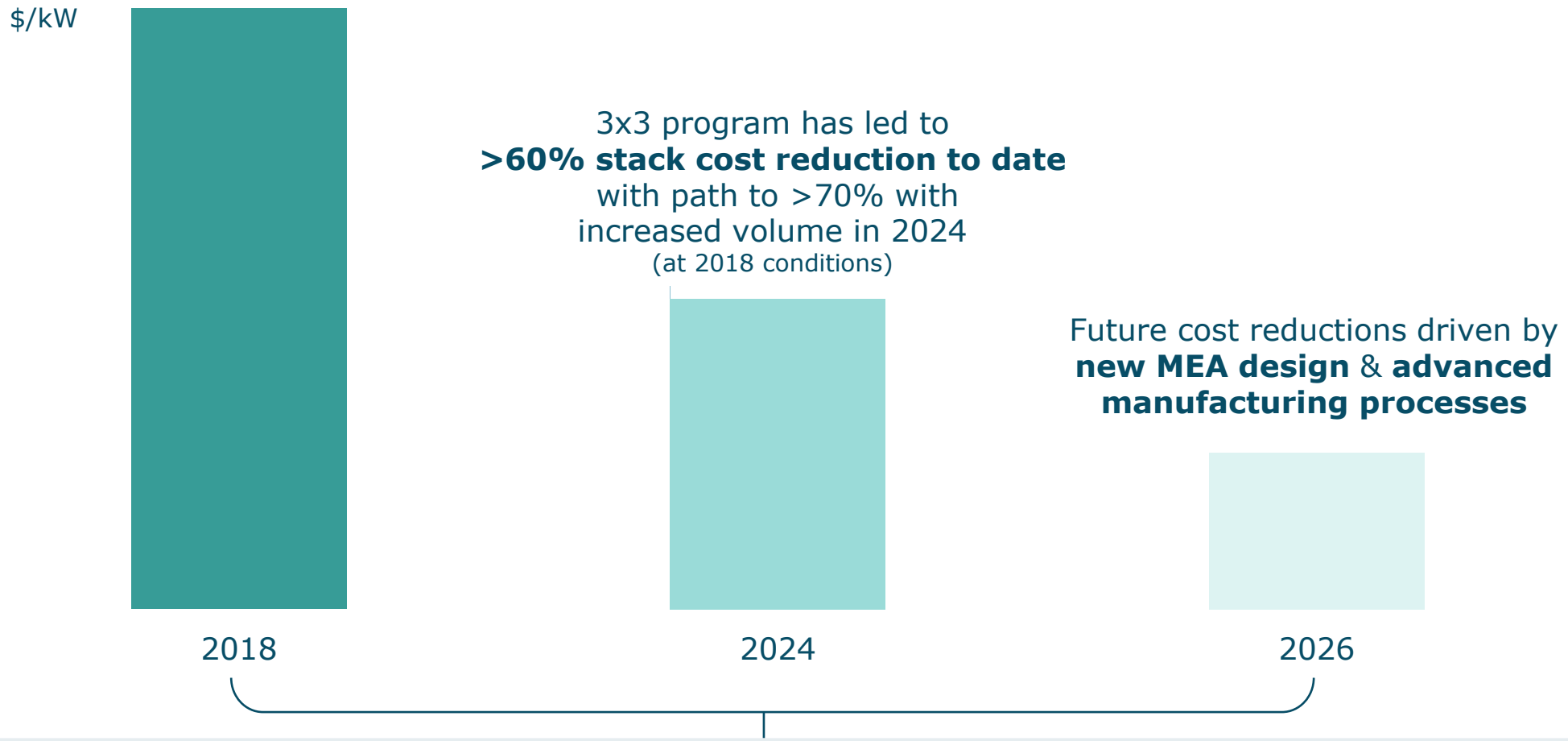
2020 – Key Priorities	2023 – Status Update[1]
Manufacturing	
Manufacturing scale-up & automation	Reduced direct labour by ~30%
Materials utilisation improvement	Achieving >99% materials utilisation
Process yield improvement	Reduced direct materials by ~8%
Materials	
Next-generation membrane	Implemented a ~20% thinner membrane
Next-generation GDL development	New GDL now utilized
Lower cost anode improving MEA durability	Reduced catalyst loading by ~50%
Next-generation flexible graphite plates	Reduced materials basis weight by ~40% & moved to lower cost supplier w/higher quality material
Engineering Design	
Power density increase in next-generation stack	>50% power density improvement through increased operating pressure
Cathode catalyst loading reduction	Increased durability chosen over catalyst loading reduction to optimize TCU

Incorporated into new stack used in 100 kW FCmove-HD+ module

1 See Slide Notes

BALLARD™

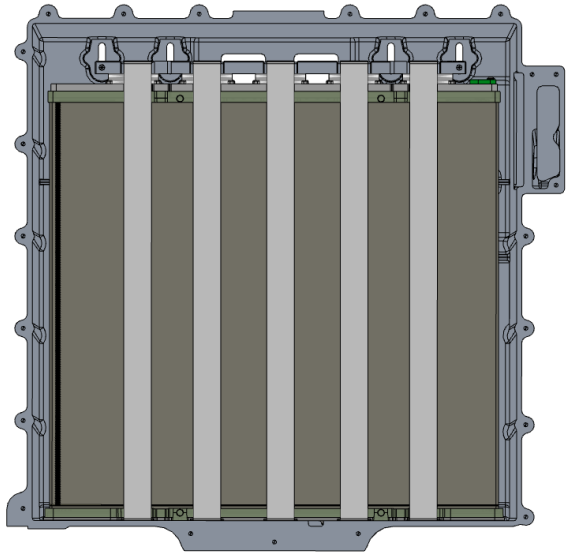
Stack Cost Reduction Achievement & Outlook[1,2]



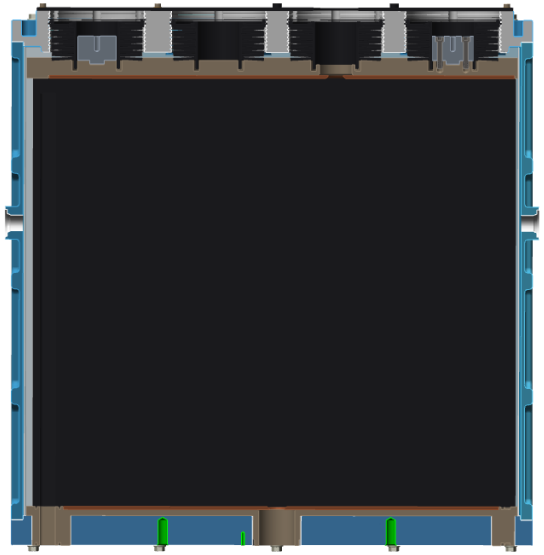
~80% reduction in stack cost from 2018 to 2026

1, 2 See Slide Notes

Example of Future Stack Design Development



Current
Stainless Steel
compression straps



Potential
Compression plate system

Change in stack enclosure design has potential to **improve power density >10%**[1]

Maximizing cell count through stack design changes results in anticipated **improved product elasticity, system efficiency, TCU & product cost**[1]

1 See Slide Notes

BALLARD™

Technology Development & Cost Reduction - Module

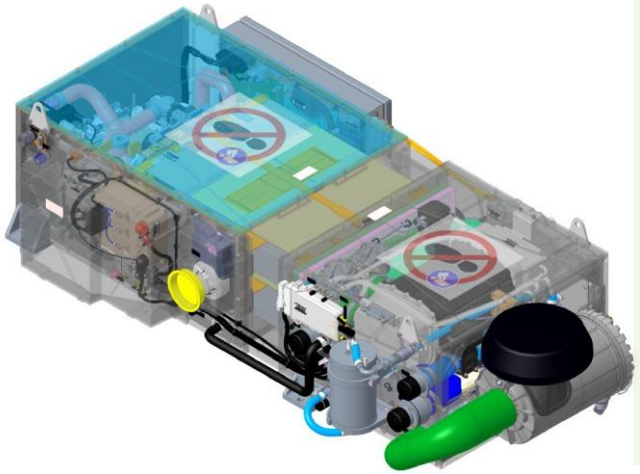
Dr. Mircea Gradu, CEngO

Balance of Plant & Design Driven Cost Reduction[1]

2019
FCmove-HD
(70kW)

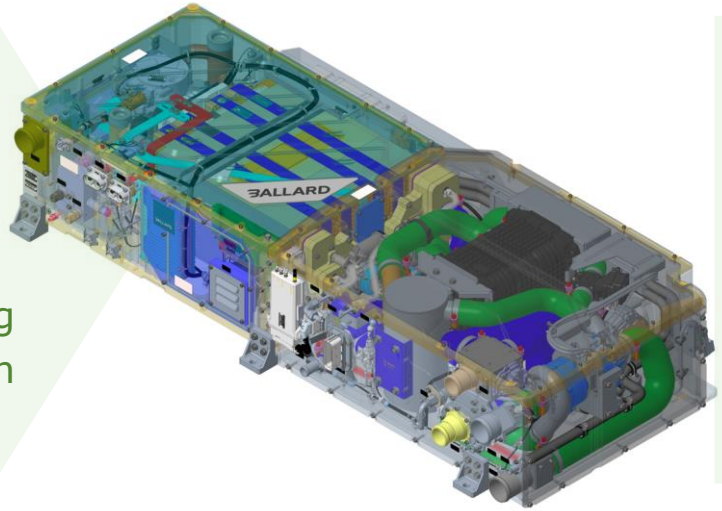
2021
FCmove-HD+
(100kW)

2023
FCmove-XD
(120kW)



~35% fewer parts

Significant manufacturing time reduction



~20% fewer parts

~50% assembly time reduction

Driving down cost by **simplifying system design, reducing part count & joint supplier component development**[1]

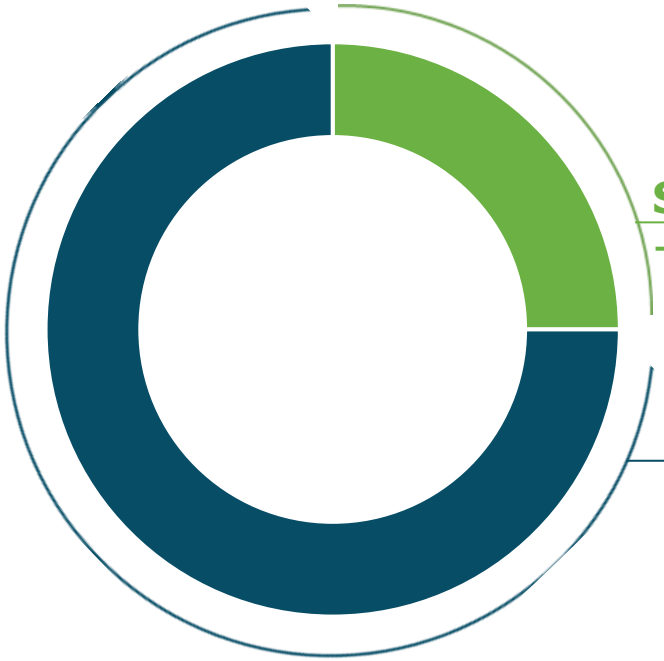
1 See Slide Notes

BALLARD™

Module Cost Down Outlook[1]

Stack cost | Balance of Plant cost

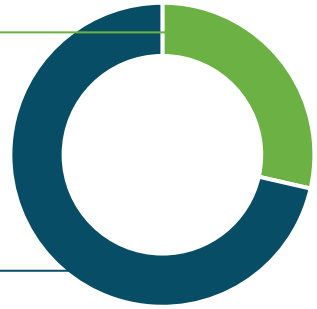
Today's module cost



Stack Cost Reduction Program
→ stack accounts for ~30-50% module cost

BOP Cost Reduction Program
→ BOP accounts for 50-70% module cost

~70% module cost reduction targeted



BOP cost reduction critical to significantly reduce module cost

1 See Slide Notes

BALLARD™

Module Roadmap: Introduction to Core Products[1]

50kW 100kW 200kW 1MW+

BUS

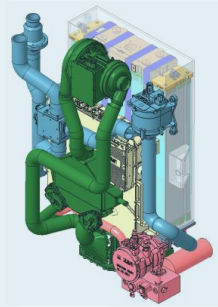
TRUCK

MARINE

RAIL

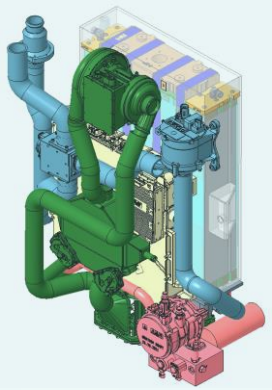
OFF-HIGHWAY

STATIONARY



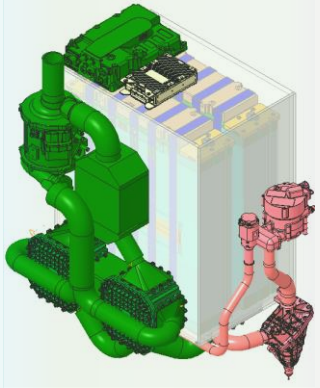
Small
Core Product

to replace:
FCmove-HD (70kW)
WBJV MD45 (45kW)



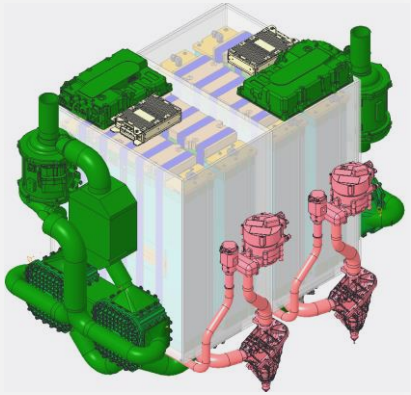
Medium
Core Product

to replace:
FCmove-HD+ (100kW)
FCmove-XD (120kW)



Large
Core Product

to replace:
FCwave (200kW)
FCrail (~150kW)
FCgen (200kW)



2X Large Core
Product Manifold

X-Large format fuel cells utilize manifold concept for higher total power requirements

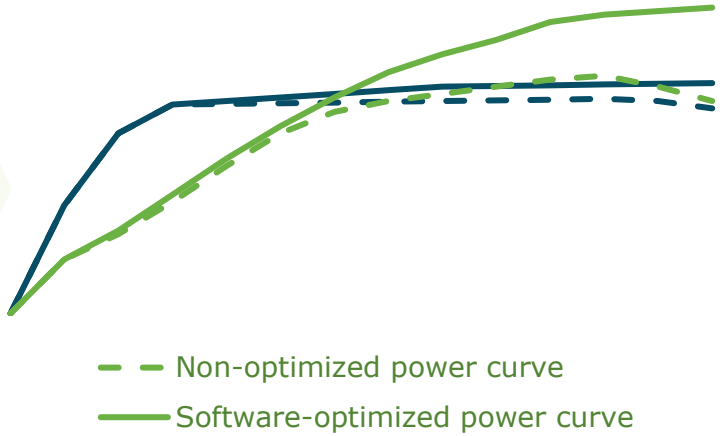
Core product **component & design standardization** for increased efficiency, vendor **purchasing power**, & **manufacturing optimization**

1 See Slide Notes

BALLARD™

Software: Improving TCU w/ optimised hardware functionality

Increased software sophistication leading to improved performance & features of modules[1]



Improvements in module performance, durability, driveability, & efficiency via software[1]

1 See Slide Notes

BALLARD™

Strategic investment in product development since 2020[1]

MEA
Heart of a Fuel Cell

Key Impacts
Fuel efficiency & durability

Future Development
Reduced platinum loading
Improved efficiency

Stack
Fuel Cell Powerhouse

Key Impacts
Size/fit, cost, durability

Future Development
Engineering design, power density, advanced manufacturing

Module
Fuel Cell Engine

Key Impacts
Efficiency, TCU, fit

Future Development
Standardization, engineering design, adv. manufacturing, cost

change since 2020	+~**75**%	+~**80**%	+~**280**%

Accelerated investment in **module development** to deliver **turn-key products** to customers across our verticals, along with **investment** in **next-generation technology & powertrain integration**

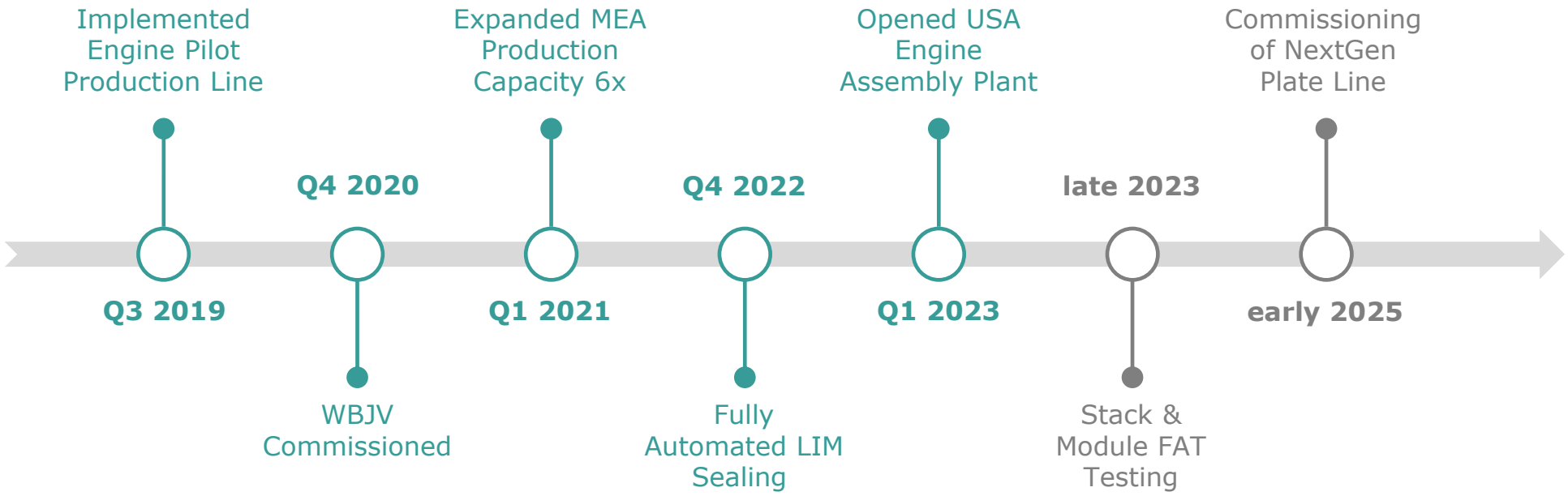
1 See Slide Notes

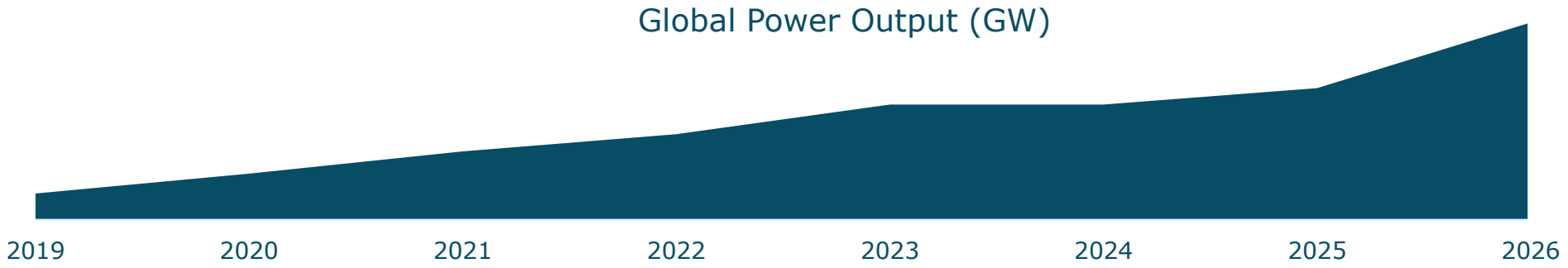
BALLARD™

Global Manufacturing

Mark Biznek, COO

Manufacturing: investments to date & near term outlook[1]





1 See Slide Notes

Manufacturing: Future investments[1]

	Near-term (2023 – 2025) *detailed planning in-flight*	**Mid-term** (2026 – 2027) *currently being scoped / developed*
MEA	Invest in sealing capabilities & capacity to enable volume growth (Burnaby)	Expand global MEA capacity (Local for Local)
Plate	Optimizing WBJV plate production to leverage in Ballard assembled products (WBJV) Developing and applying next-gen plate manufacturing processes for cost reduction (Burnaby)	
Stack	Optimizing stack production capabilities for new & future product lines (Burnaby & WBJV)	Automated stack assembly (Burnaby)
Engine	Supply chain efficiency / cost reduction & maximizing existing production capacity (Burnaby, USA, Denmark)	Expand engine assembly capacity in line with demand growth (Local for Local)

1 See Slide Notes

BALLARD™

Global & Local Strategy[1]

- Focus capital allocation in strategic locations to support local fuel cell demand growth
- Conducting strategic review of manufacturing options in US & Europe
- Comparative analysis with China MEA localization plan

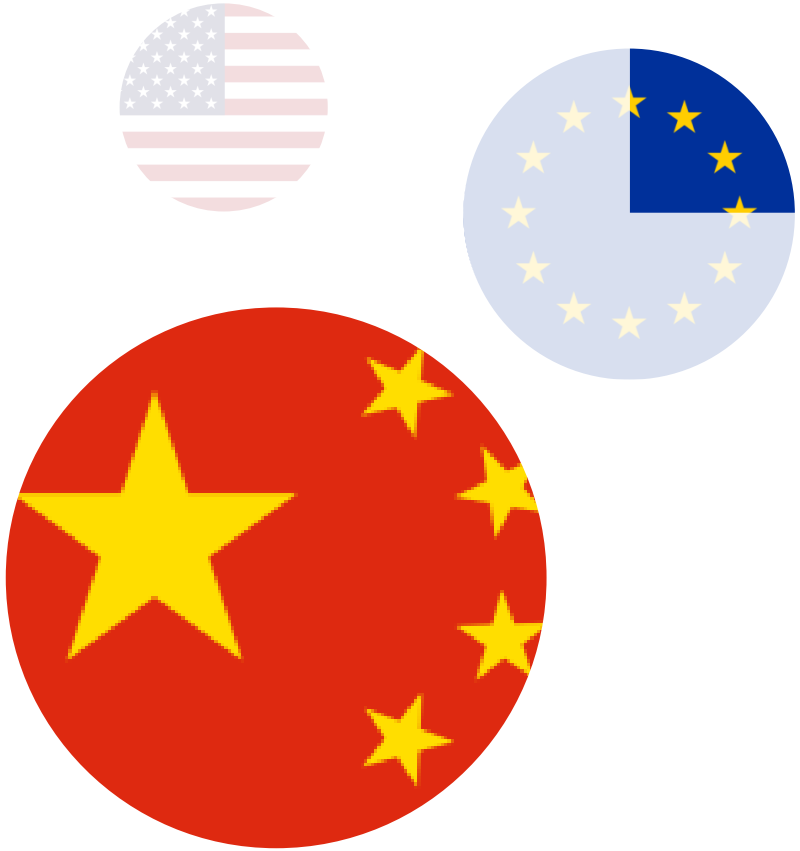
- **Local for Local considerations:**
  - Access to low cost, low carbon hydrogen
  - Strong market demand for fuel cells
  - Access to funding support / alternative sources of capital
  - Proximity to customers, suppliers & talent
  - Dynamic geopolitical considerations

1 See Slide Notes

BALLARD™

Local for Local Program[1]

Prior Capacity Planning Environment



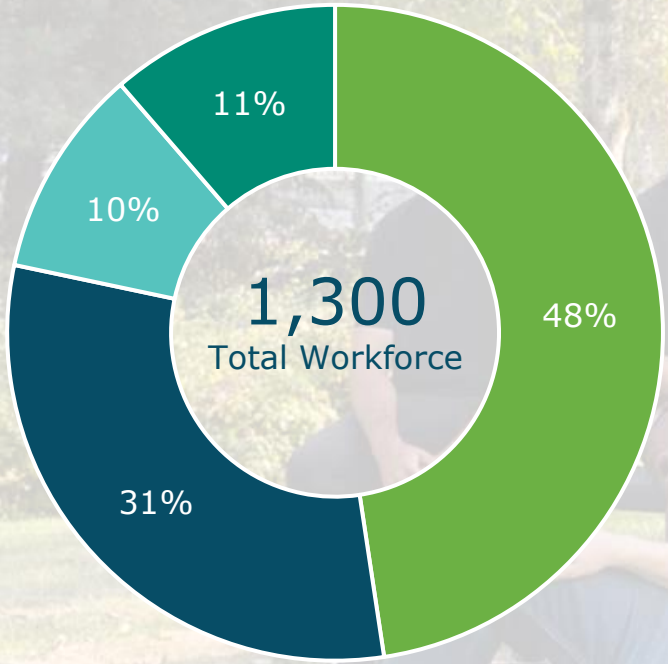
Current Capacity Planning Environment

People, Culture & ESG

Jyoti Sidhu, CPO

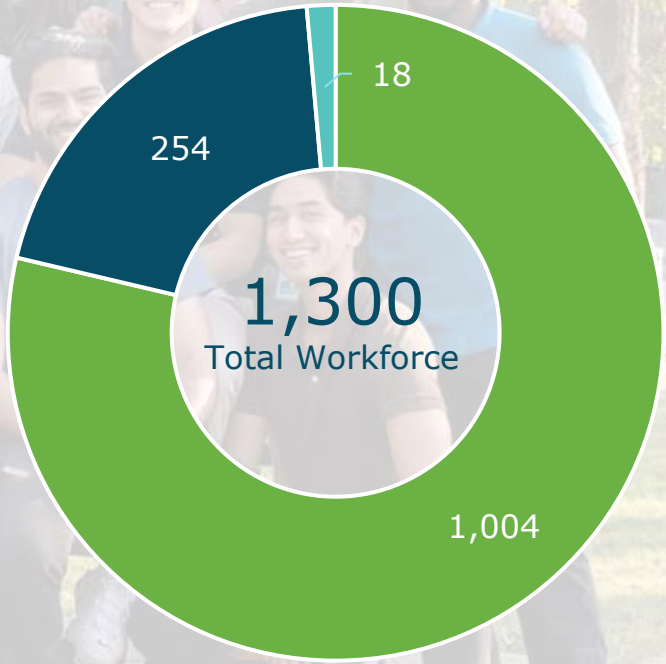
Our global team[1,2]

Headcount distribution by function



- Tech & Prod Dev
- Operations
- General & Admin
- Commercial

Headcount by region



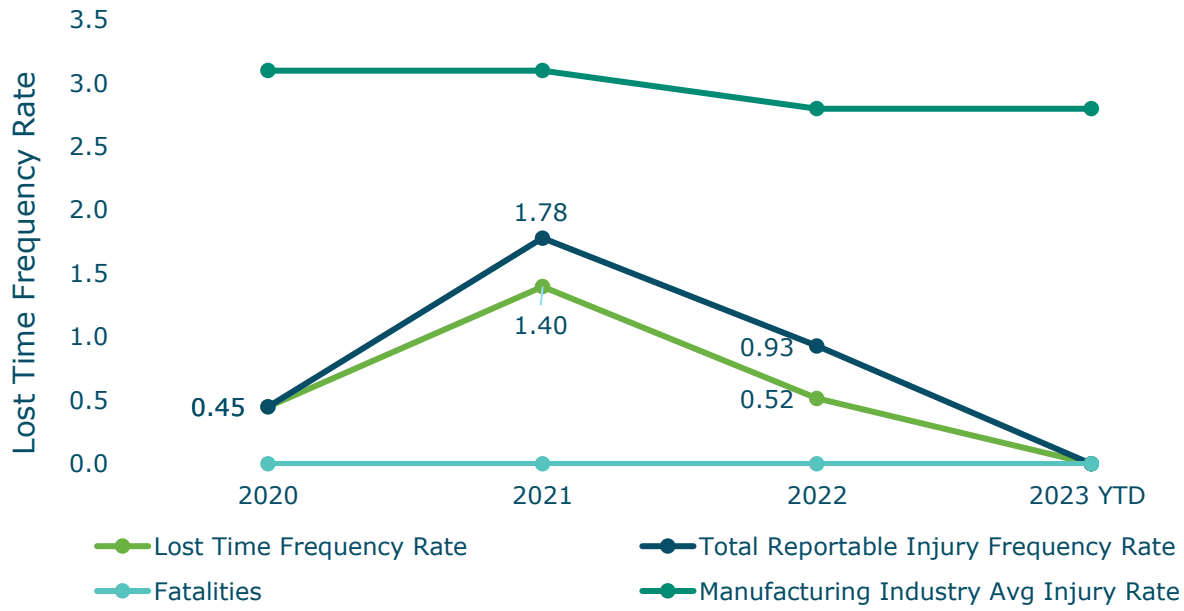
- North America
- Europe
- APAC*

1, 2 See Slide Notes

EH&S Performance

Our Goal: Everyone goes home safe at the end of the day

- 160 consecutive days without lost time injury
- 0 injuries 2023 year to date[1]
- Reportable injury frequency rate lower than industry average for past four years[2]
- Expanded health & safety training across the organization resulting in 2,887 cumulative training courses completed by all employees

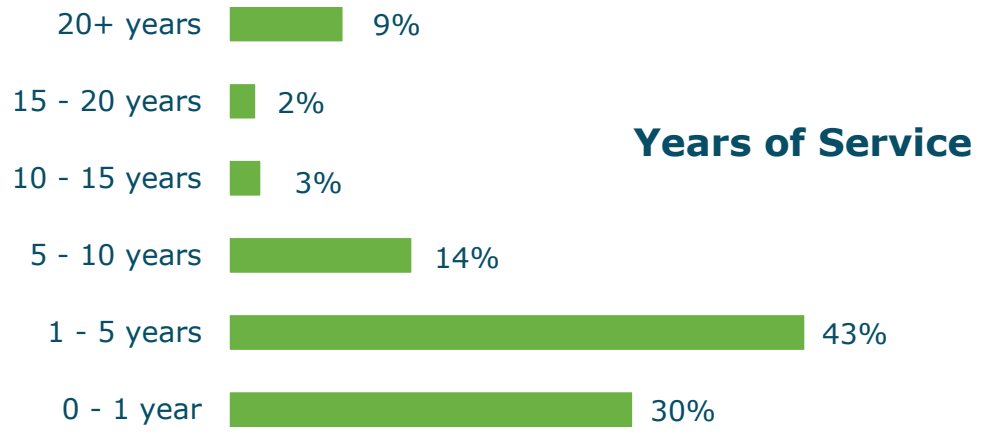


1, 2 See Slide Notes

Our People Drive our Success[1]

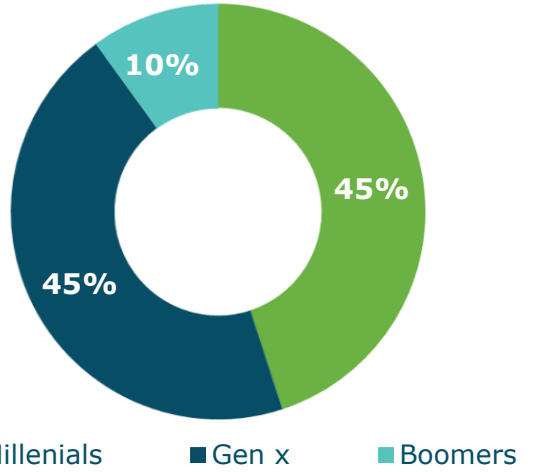
We continue to implement actions that promote diversity, equity and inclusion (DEI)

- Our workforce represents >32 countries
- Established a refreshed DEI strategy in 2022
- Increased women representation at the senior leadership level by 78% since 2019
- Launched global Women's Coffee Connect Employee Resources Group



Gender Diversity[2]

Generational Diversity



1, 2 See Slide Notes

Our People Drive our Success[1]

Employee Engagement

16
Consecutive years of Employee Engagement Surveys

>94%
Participation rate for past four years

2022 Results

77%
Would recommend Ballard as a great place to work

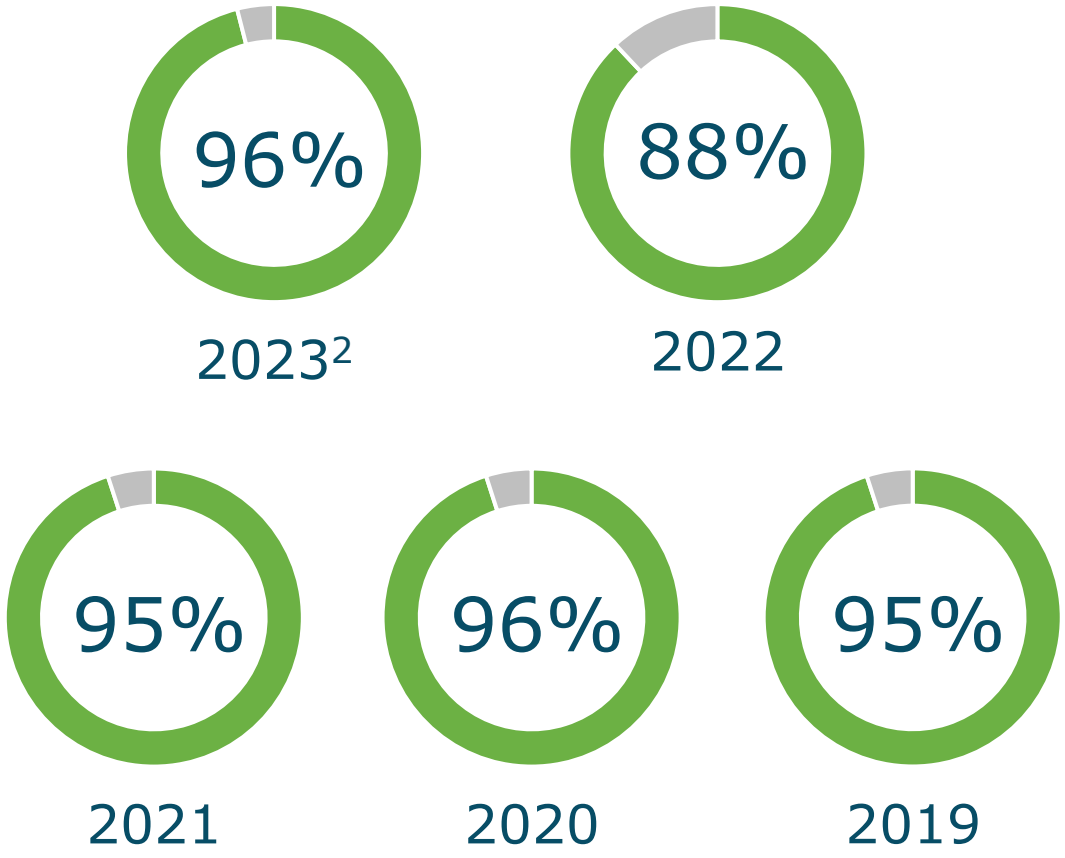
78%
Feel their opinions are valued

84%
Feel they can count on their co-workers

82%
Feel they are well supported by their manager

In 2022, we implemented new engagement survey platform improve benchmarking and ongoing engagement dialogue

Employee Retention



1, 2 See Slide Notes

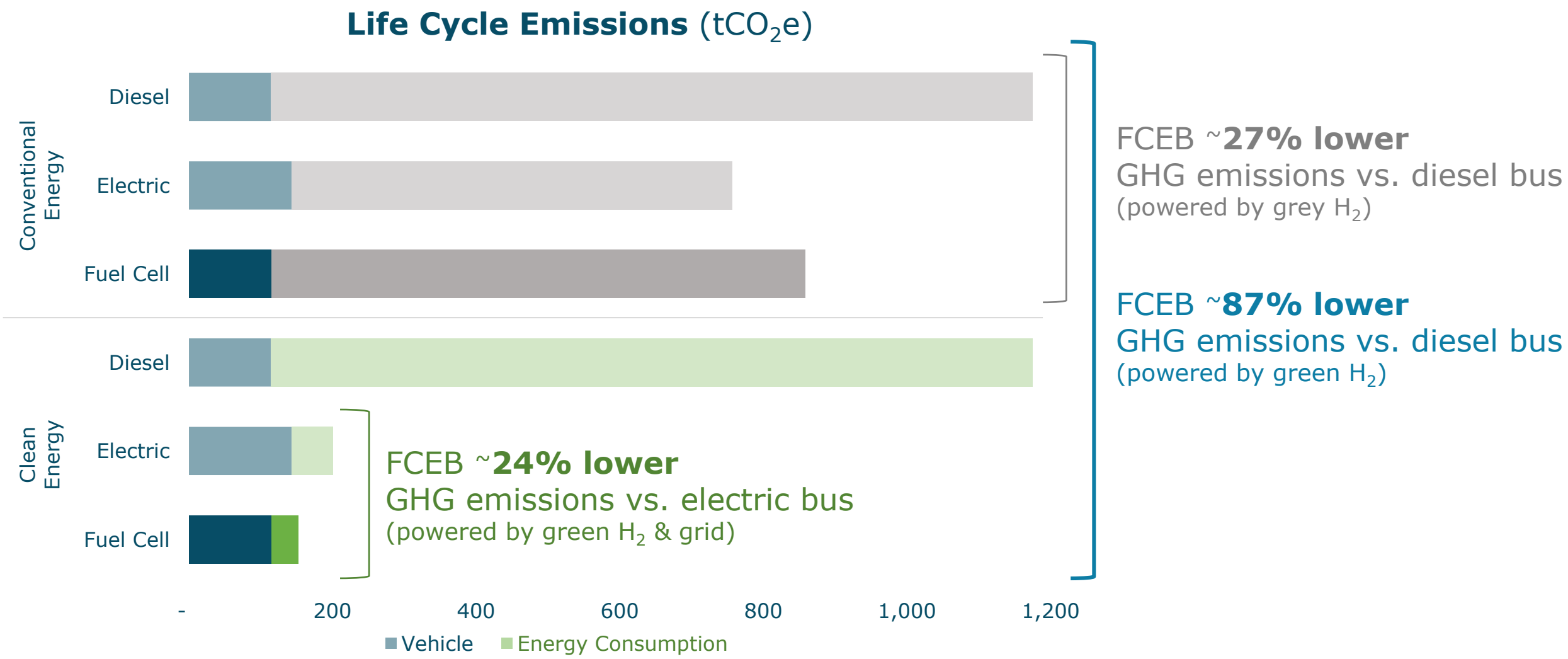
Our Future of Work

Invested in Canadian workspaces to enhance collaboration & facilitate hybrid workforce

- Transformed previously static areas for single task work into dynamic & flexible work spaces
- Repurposed large boardrooms into collaboration & training rooms
- Upgraded technology for increased hybrid meetings to reduce travel & carbon emissions while retaining global collaboration

BALLARD™

Bus Comparative Life Cycle Assessment[1] (FCmove™-HD)



1 See Slide Notes

BALLARD™

Ballard's sustainability impact

Ballard fuel cell technologies are
facilitating the energy transition & helping customers achieve important emissions targets

- 'Cradle to grave' assessment[1]
  - FCmove™-HD used in bus application has ~87% lower lifespan carbon footprint, when powered by green hydrogen, than conventional diesel bus
  - Aluminum & platinum account for ~60% of FC embodied emissions
  - ~95% of platinum reclaimed in used MEAs
- Mission Carbon Zero: Road to Carbon Neutrality
  - Targeting carbon neutrality of corporate emissions by 2030[2]

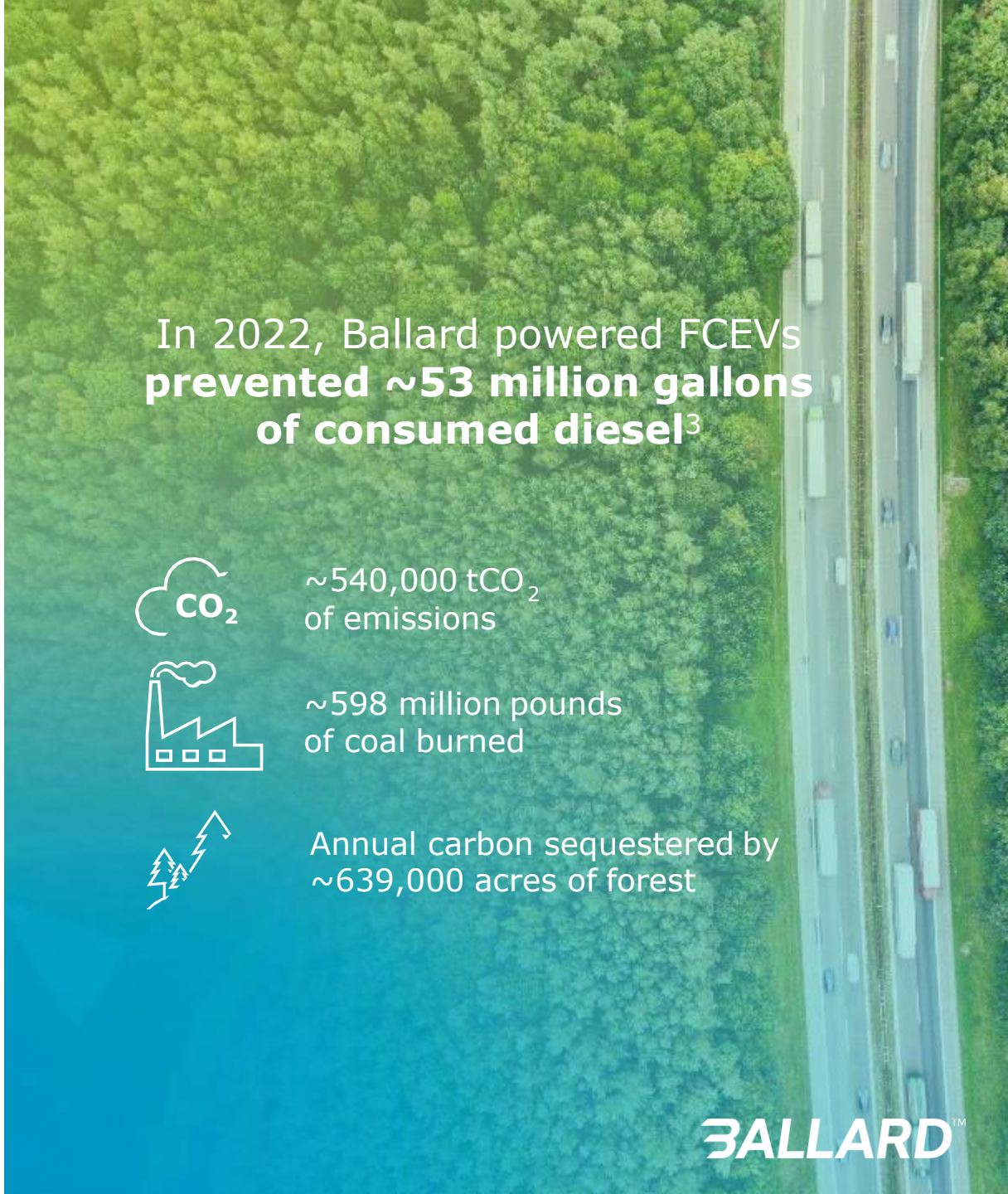
ESG Ratings

MSCI ESG RATINGS AAA
CCC B BB BBB A AA AAA

Corporate ESG Performance Prime
RATED BY ISS ESG

CDP DISCLOSURE INSIGHT ACTION
2022 Climate Score: B-

SILVER 2022 ecovadis Sustainability Rating



In 2022, Ballard powered FCEVs **prevented ~53 million gallons of consumed diesel**[3]

CO_2 ~540,000 tCO_2 of emissions

~598 million pounds of coal burned

Annual carbon sequestered by ~639,000 acres of forest

1, 2, 3 See Slide Notes

BALLARD™

Commitments for the Planet[1]

Here for life™

Mission Carbon Zero: Carbon Neutral by 2030

Plan to achieve carbon neutrality for corporate emissions consists of six goals supporting decoupling of emissions growth from business growth

KEY PERFORMANCE INDICATORS	2020	2021	2022	2030 TARGET[1]
CO_2 emissions in scope 1 & 2 (tCO_2e)	1,680	1,722	1,849	Neutrality by 2030
CO_2 emissions of corporate[2] scope 3 (tCO_2e)	2,579	3,224	4,484	
Emissions Intensity (tCO_2e / employee)	6.77	6.92	6.76	⇩ 50%
Emissions Intensity (tCO_2e / kW module)	0.34	0.40	0.34	
% carbon free energy (scope 1+2)	72%	73%	72%	100%
% renewable electricity (scope 2)	96%	98%	98%	

1, 2 See Slide Notes

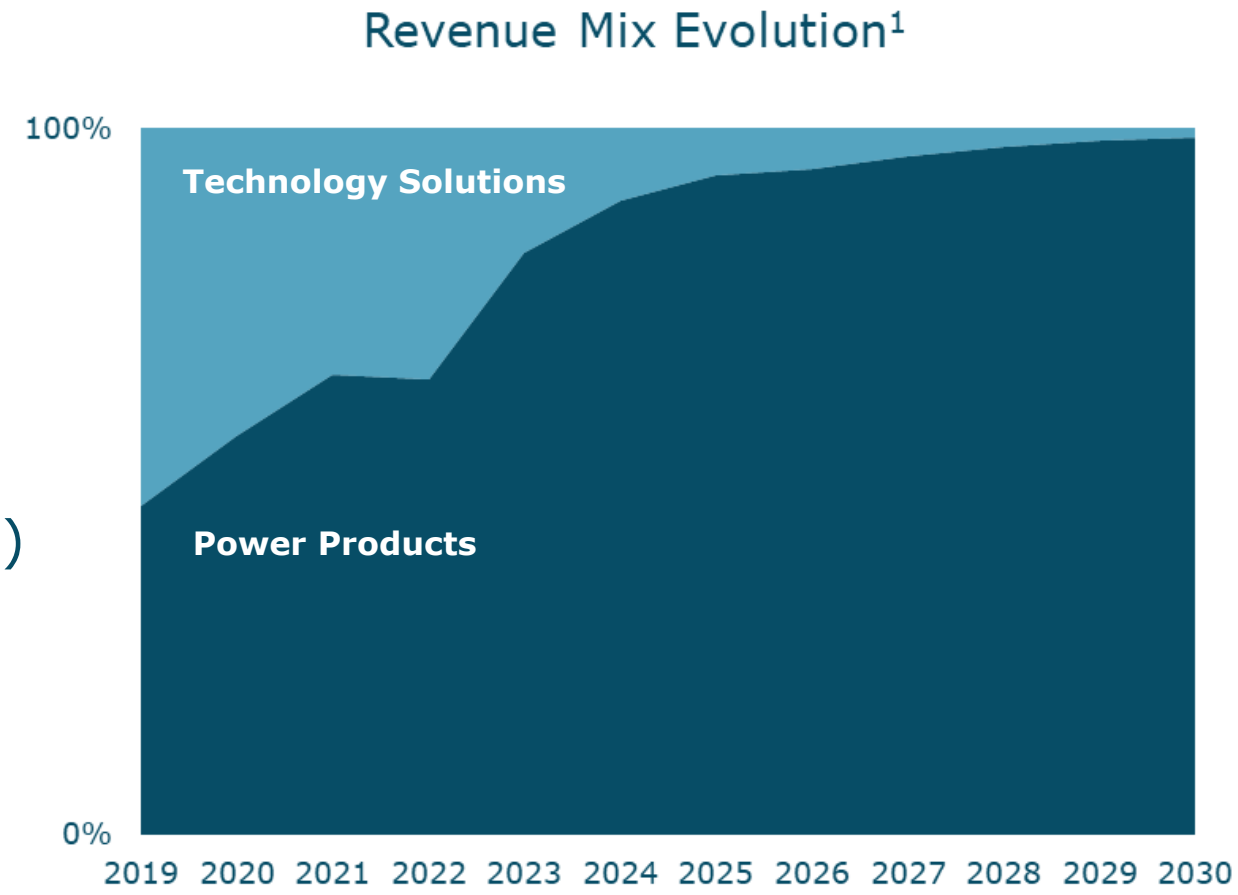
BALLARD™

Financial Outlook

Paul Dobson, CFO

Evolution to product company[1]

- **Strategic evolution into a product company**
- Increased fuel cell sales revenue (absolute & proportion of total revenue)
- Resulting in **shift in cost structure, margin, & capital outlook**



1 See Slide Notes

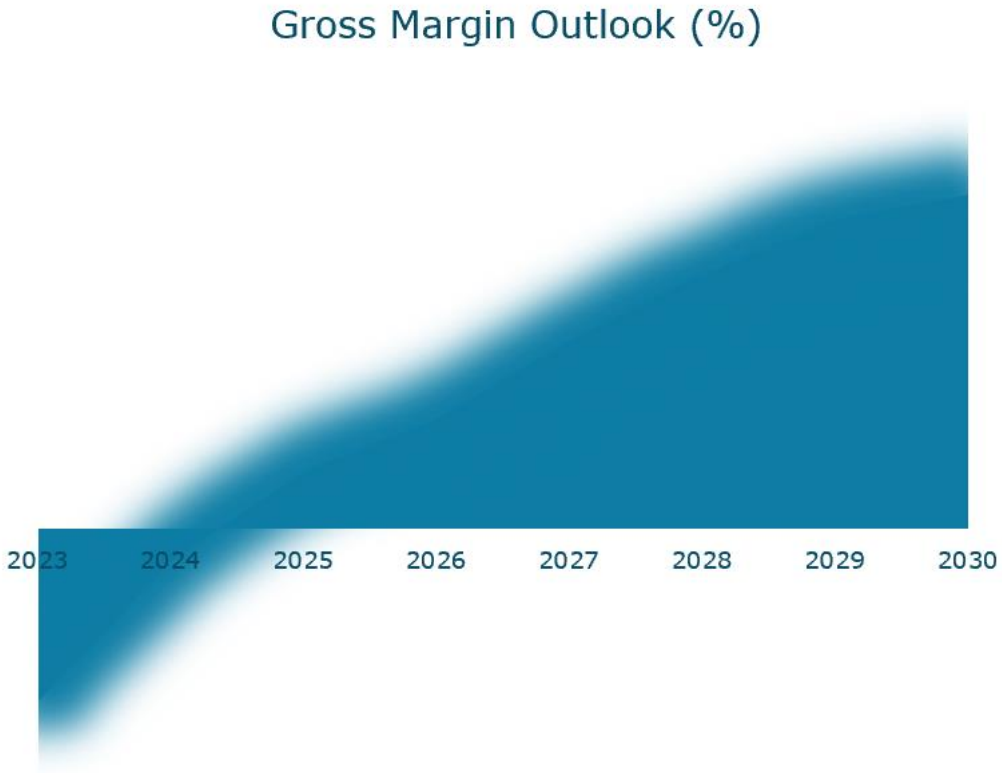
Mid & long-term revenue outlook[1]

- Annual revenue growth expected, largely **driven by power products growth**
- **Inflection point anticipated in latter half of decade** as H_2 production commissioned & TCU parity reached

1 See Slide Notes

Gross Margin analysis & outlook[1]

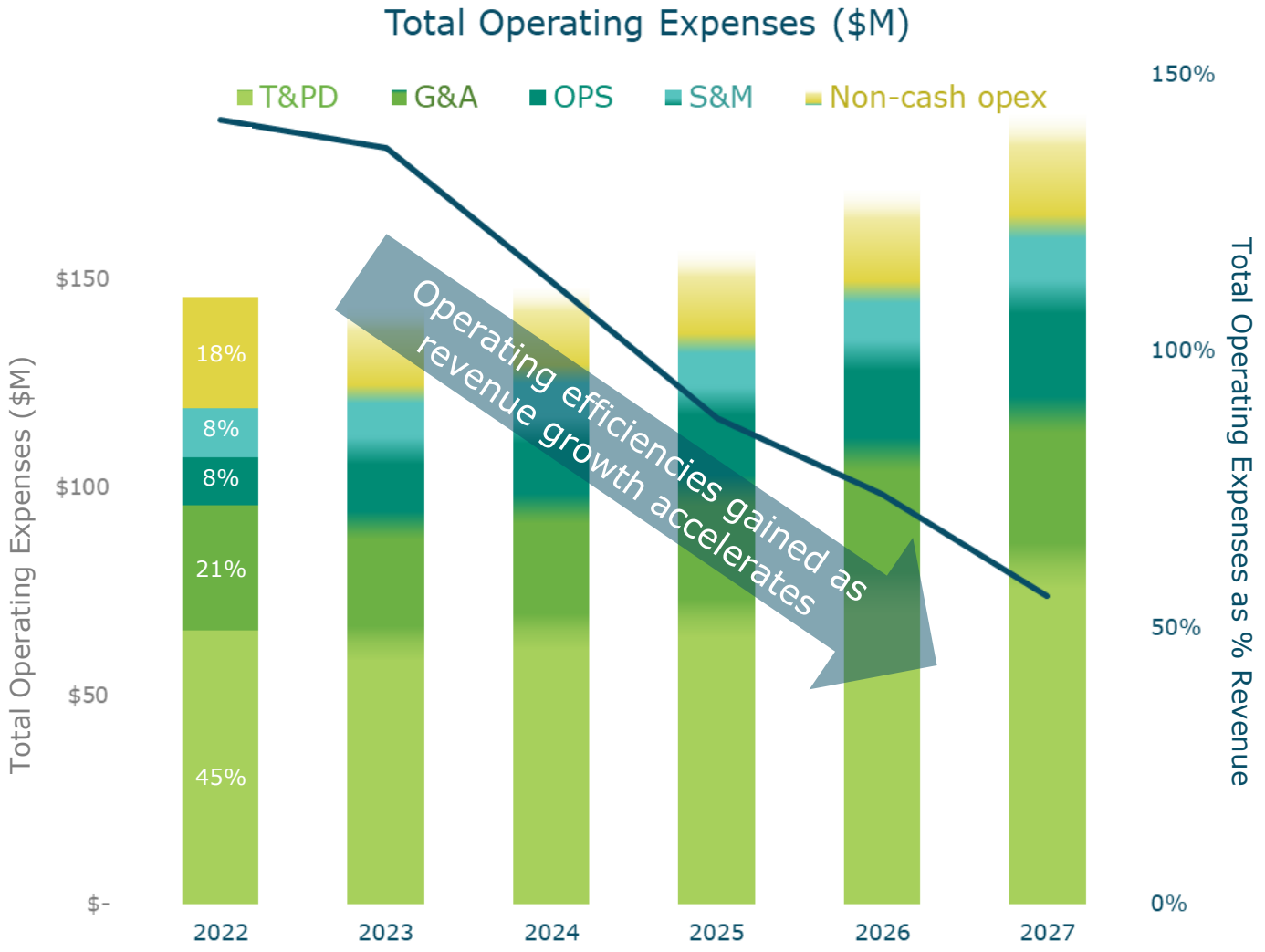
- Targeting **mid-20s gross margin by 2030**[1]
- Opportunities to expand beyond 2030
- Expansion driven by:
  - Product scaling & commercial volume sales
  - Cost reductions outpacing pricing pressure through evolution to core products & implementation of advanced manufacturing processes
  - Allocation of fixed overhead costs across larger revenue base



1 See Slide Notes

Total Operating Expense Outlook[1,2]

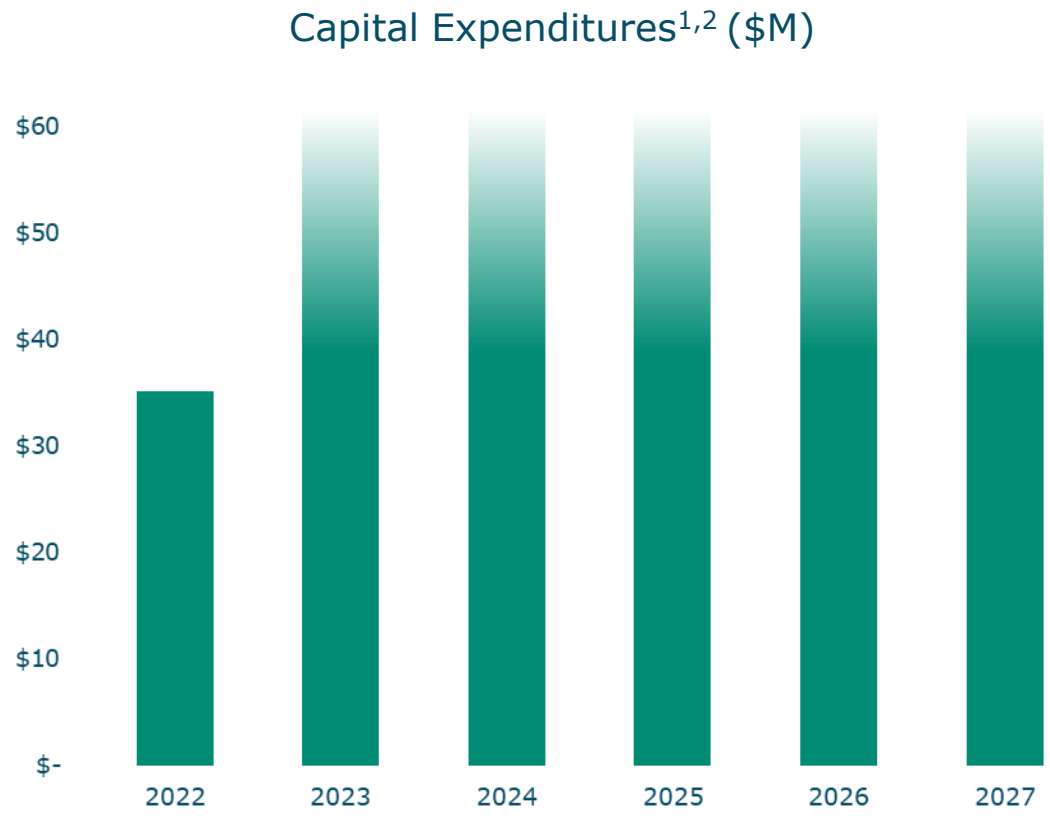
- Total operating expenses expected to stay relatively flat in near-term
- Cost structure anticipated to decrease as a percent of revenue
- 2023 Total Opex Guidance $135 – 155M



1, 2 See Slide Notes

Capital Expenditure Outlook[1,2]

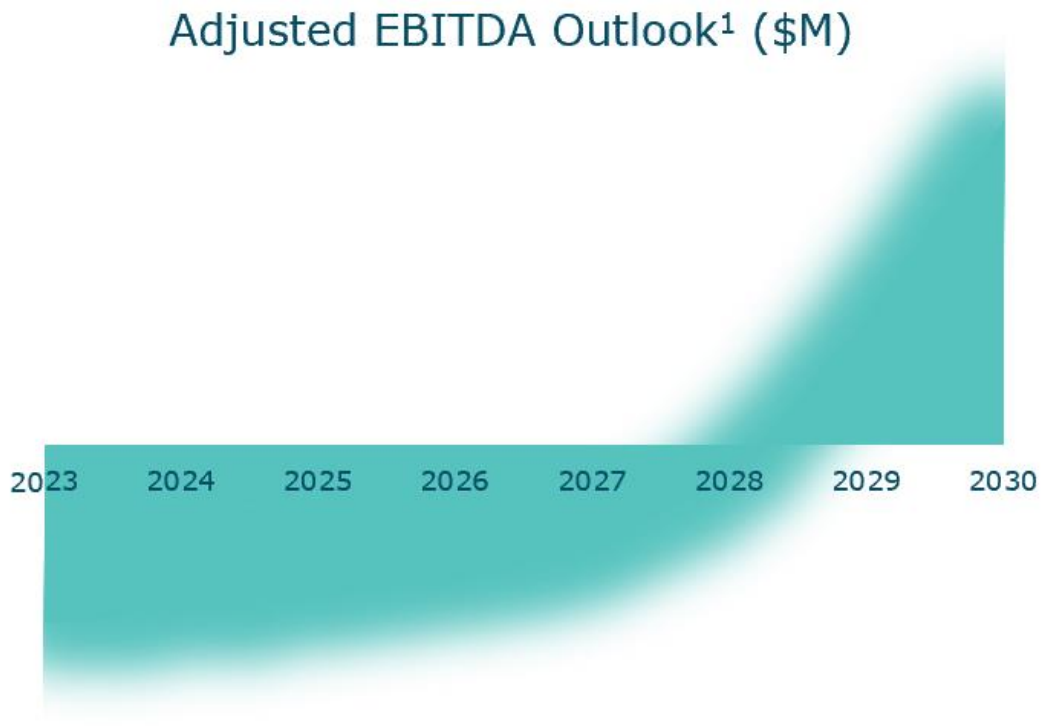
- Incremental capital investment expected for capacity expansion in target markets in line with 'Local for Local' strategy
- **Planned capital allocation with some timing flexibility**, dependent upon revenue uptake & policy support opportunities
- ~$300M total capex[2] anticipated between 2023 – 2027 to deliver forecast, roughly spread evenly per year
- 2023 capex guidance $40 – 60M



1, 2 See Slide Notes

Pathway to profitability[1]

- Top line revenue growth, margin expansion & cost management required to achieve expected EBITDA breakeven in **latter half of the decade**[1]



1 See Slide Notes

Balance sheet management[1]

- Currently have ~$864M cash, no debt
- Focus on optimizing cash runway & maintaining balance sheet strength
- Organic growth prioritized over inorganic investment opportunities
- Exploring government funding opportunities to support growth plans

1 See Slide Notes

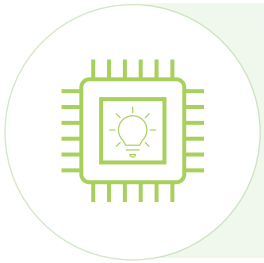
Closing Remarks

Randy MacEwen, President & CEO

Summary[1]

Ballard has **substantially grown its customer base** while existing customers have climbed the fuel cell maturity curve

While **increasing market & regional diversification** with **growing proportion** of revenue & backlog **from power products**



We have **achieved progress in stock cost reduction** & expect to bring module cost down with BOP components & new designs

Fuel cell competition has increased, leading to **increased investment in R&D & manufacturing** capabilities to maintain technological leadership, enable cost down & achieve economies of scale

1 See Slide Notes

BALLARD™

Where is Ballard going & what to expect[1]

New customer platforms in key verticals & customers maturing in fuel cell adoption

Increasing product driven revenue as fuel cell adoption scales

Product volume scale, design evolution & advanced manufacturing

Top line revenue growth, achieving cost down targets & economies of scale

1 See Slide Notes

BALLARD™

Slide Notes

Slide Notes

Slide 6 - none

Slide 7

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 8

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 9

1. Hydrogen Council Policy Summary from International CEO Event, Kobe, Japan, June 2023.

Slide 10

1. As of June 13, 2023
2. Hydrogen Council: Hydrogen Insights 2023, May 2023

Slide 11 – none

Slide 12 - none

Slide 13 – none

Slide 14 - none

Slide 15

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 16 - none

Slide 17

1. As of March 31, 2023; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 18

1. As of March 31, 2023; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 19

1. As of March 31, 2023; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 20

1. As of March 31, 2023.

Slide 21

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 22

1. As of December 31, 2020.

Slide 23

1. As of June 13, 2023; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 24

1. As of December 31, 2022.

Slide 25

1. As of December 31, 2022.

Slide 26

1. As of June 13, 2023.

Slide 27

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 28

1. As of June 13, 2023; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.
2. Interact Analysis, The HEV and Electrified Truck and Bus Market; 2020
3. MarketsandMarkets, Hybrid Train Market - Global Forecast to 2030; April 2019.
4. The Rail Inc - The North American Locomotive Review 2021. Refurbishments assume 17% of existing North American locomotives, as of 2021, are converted to low/zero emission engines by 2030. Approximately double units refurbished year over year to result in 3,200 conversions in the year 2030.
5. Transparency Market Research, Marine Hybrid & Full Electric Propulsion Market - Global Industry Analysis, Size, Share, Growth, Trends, and Forecast, (2020-2030); 2020
6. Off-Road and Stationary data are values obtained from consulting engagement and cannot be cited to publicly available source.

Slide 29

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 30

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 31

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 32

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 33

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 34

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 35

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 36 – none

Slide 37 - none

Slide 38

1. Long-haul duty cycle assumes average daily range of 650km, a maximum of 800km per day, 270 days per year of operation, an average vehicle speed of 85km/h and an average payload carry of 75%.

Slide 39 – none

Slide 40 – none

Slide 41 – none

Slide 42

1. All Powertrain cases assumes a purchased fleet size of 100 vehicles, a 4-year holding period of the truck, and 3rd party infrastructure for refueling. Majority of model inputs sourced from market/public data; Fuel Cell cost based on Ballard FCmove-XD product line. Energy pricing assumed Diesel €1.80/L flat, Electricity €0.40/kWh flat and green H2 of €13/kg in 2023 decreasing linearly to €6/kg in 2030. Long-haul duty cycle sourced from ICCT Fuel Efficiency Technology in European Heavy-Duty Vehicles.
2. Policy includes zero emission subsidy of 80% of the difference in truck capital cost relative to the equivalent diesel truck capped at €550,000 for trucks whose GVW is above 20 tonnes. 75% road toll exception for zero-emission trucks. Carbon tax burden on diesel is not included.

BALLARD™

Slide Notes Cont.

Slide 43 – none

Slide 44

1. All Powertrain cases assumes a purchased fleet size of 100 vehicles, a 4-year holding period of the truck, and 3rd party infrastructure for refueling. Majority of model inputs sourced from market/public data; Fuel Cell cost based on Ballard FCmove-XD product line. Energy pricing assumed Diesel €1.80/L flat, Electricity €0.40/kWh flat and green H2 of €13/kg in 2023 decreasing linearly to €6/kg in 2030. Long-haul duty cycle sourced from ICCT Fuel Efficiency Technology in European Heavy-Duty Vehicles.
2. Policy includes zero emission subsidy of 80% of the difference in truck capital cost relative to the equivalent diesel truck capped at €550,000 for trucks whose GVW is above 20 tonnes. 75% road toll exception for zero-emission trucks. Carbon tax burden on diesel is not included.

Slide 45

1. All Powertrain cases assumes a purchased fleet size of 100 vehicles, a 4-year holding period of the truck, and 3rd party infrastructure for refueling. Majority of model inputs sourced from market/public data; Fuel Cell cost based on Ballard FCmove-XD product line. Energy pricing assumed Diesel €1.80/L flat, Electricity €0.40/kWh flat and green H2 of €13/kg in 2023 decreasing linearly to €6/kg in 2030. Includes policy impact. Carbon taxes excluded.
2. Policy includes zero emission subsidy of 80% of the difference in truck capital cost relative to the equivalent diesel truck capped at €550,000 for trucks whose GVW is above 20 tonnes. 75% road toll exception for zero-emission trucks. Carbon tax burden on diesel is not included.

Slide 46

1. All Powertrain cases assumes a purchased fleet size of 100 vehicles, a 4-year holding period of the truck, and 3rd party infrastructure for refueling. Majority of model inputs sourced from market/public data; Fuel Cell cost based on Ballard FCmove-XD product line. Energy pricing assumed Diesel €1.80/L flat, Electricity €0.40/kWh flat and green H2 of €13/kg in 2023 decreasing linearly to €6/kg in 2030. Includes policy impact. Carbon taxes excluded.
2. Policy includes zero emission subsidy of 80% of the difference in truck capital cost relative to the equivalent diesel truck capped at €550,000 for trucks whose GVW is above 20 tonnes. 75% road toll exception for zero-emission trucks. Carbon tax burden on diesel is not included.

Slide 47

1. All Powertrain cases assumes a purchased fleet size of 100 vehicles, a 4-year holding period of the truck, and 3rd party infrastructure for refueling. Majority of model inputs sourced from market/public data; Fuel Cell cost based on Ballard FCmove-XD product line. Energy pricing assumed Diesel $1.25/L flat, Electricity $0.17/kWh flat and H2 of $8/kg in 2023 decreasing linearly to in $2/kg 2030.
2. Hydrogen supply assumed to be blended source of grey and green hydrogen supply of adequate carbon intensity.
3. Policy includes HVIP and IRA vehicle capital subsidy and IRA infrastructure subsidy, which is assumed to be a constant until 2025 and linearly decrease until 2030. IRA hydrogen fuel subsidy included; potential subsidy of US$3/kg but modeled US$1/kg.

Slide 48

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 49 – none

Slide 50

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 51

1. As of June 13, 2023; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 52

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 53

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 54

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 55

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.
2. PGM prices as at April 14, 2023.

Slide 56

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 57 – none

Slide 58

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 59

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 60

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 61

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 62

1. As of December 31, 2022.

Slide 63 – none

Slide 64

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 65

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 66

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 67 – none

BALLARD™

Slide Notes Cont.

Slide 68 – none

Slide 69

1. As of December 31, 2022; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.
2. Excludes Weichai Ballard Joint Venture.

Slide 70

1. As of May 31, 2022.
2. Industry average obtained from https://www.bls.gov/charts/injuries-and-illnesses/number-and-rate-of-nonfatal-work-injuries-by-industry.htm

Slide 71

1. All data as of December 31, 2022.
2. On February 9, 2023, Duy-Loan Le retired from the board of directors bringing our current percentage of female representation to 22%, and currently in process of recruiting a replacement.

Slide 72

1. 2022 annual data as at December 31, 2022.
2. YTD 2023 is as at April 30, 2023.

Slide 73 – none

Slide 74

1. Based on life cycle assessment and comparative analysis conducted through third party, Ostrom Climate, analyzing Ballard's FCmove™HD module used in a bus application and includes the impacts of an 80-kWh powertrain battery. For the comparative analysis, Ostrom Climate compiled cradle-to-grave data on bus types such as diesel, electric, hybrid, and plug-in hybrid by reviewing readily available scientific literature on LCAs. The main source of data used for analysis came from the Life Cycle Assessment of City Buses Powered by Electricity, Hydrogenated Vegetable Oil or Diesel (Nordelof, A., Romare, M., Tivander, J. (2019). Life Cycle Assessment of City Buses Powered by Electricity Hydrogenated Vegetable Oil or Diesel. Transportation Research Part D: Transport and Environment, 75, 211-222. https://doi.org/10.1016/j.trd.2019.08.019), since it is a current study that provided a detailed breakdown of emissions for each vehicle type and life cycle stage.

Slide 75

1. Based on life cycle assessment and comparative analysis conducted through third party, Ostrom Climate, analyzing Ballard's FCmove™HD module used in a bus application and includes the impacts of an 80-kWh powertrain battery. For the comparative analysis, Ostrom Climate compiled cradle-to-grave data on bus types such as diesel, electric, hybrid, and plug-in hybrid by reviewing readily available scientific literature on LCAs. The main source of data used for analysis came from the Life Cycle Assessment of City Buses Powered by Electricity, Hydrogenated Vegetable Oil or Diesel (Nordelof, A., Romare, M., Tivander, J. (2019). Life Cycle Assessment of City Buses Powered by Electricity Hydrogenated Vegetable Oil or Diesel. Transportation Research Part D: Transport and Environment, 75, 211-222. https://doi.org/10.1016/j.trd.2019.08.019), since it is a current study that provided a detailed breakdown of emissions for each vehicle type and life cycle stage.
2. Corporate emissions are defined within the Ballard Carbon Neutral Plan as scope 1, scope 2 and partial scope 3 emissions including employee commuting, business travel and hydrogen purchase for R&D activities. Analysis based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.
3. Calculation based on ~1,440 buses and ~2,230 trucks in service in 2022. Utilized average annual miles traveled, fuel economy, and fuel consumption as provided by the Federal Highway Administration highway statistics. Assumed all buses are 'Transit Buses' and trucks 'Class 8 Trucks' for derivation of approximate fuel consumption. Emissions calculations were derived using US EPA emissions equivalency calculation

Slide 76

1. As of December 31, 2022; Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.
2. Corporate emissions includes scope 1, 2 and partial scope 3 (business travel, employee commuting and hydrogen consumption from R&D activities)

Slide 77 – none

Slide 78

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 79

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 80

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 81

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.
2. Total Operating Expenses refer to the measure reported in accordance with IFRS.

Slide 82

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.
2. Capital Expenditure is defined as Additions to property, plant and equipment and Investment in other intangible assets as disclosed in the Consolidated Statements of Cash Flows.

Slide 83

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 84

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 85 – none

Slide 86

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

Slide 87

1. Based on company's current business plans and the current business environment, which are subject to change. Actual results may differ materially. See Forward-Looking Statements.

BALLARD™