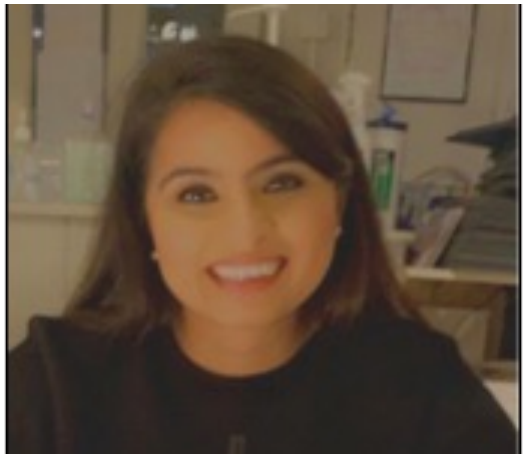
Science Based Targets Workshop 4

The meeting will commence shortly

Use the 'Q&A' functionality to ask questions

This meeting will be recorded

Welcome



Rupa Bhatt
Strategic Supplier Manager

- Network Rail Organisational Update
- Network Rail are pleased to announce that after only **11** periods we have managed to get **201** suppliers committed to SBT's, accounting for **55%** of our 75% carbon emissions goal
- SBT Website: https://sciencebasedtargets.org/

Agenda – Workshop 4

Topic	Speaker	Time
Welcome & Introductions	Rupa Bhatt (Network Rail)	10:00am
	Steve Elderkin (National Highways)	
	Steven Van Niekerk (HS1)	
	Mark Fenton (HS2)	
	James Ingram (TfL)	
	Christopher Harris (East West Rail)	
Overview on Social Value	Louise Mackay (Network Rail)	10:10am
Decarbonisation & Supply Chain Overview	Alistair Dormer (Hitachi)	10:20am
Break		10:45am
Environmentally Sustainable Procurement	Debra Parker (Network Rail)	10:50am
Net-Zero Plans	Mark Fenton (HS2)	11:10am
Expert Panel Q&A	Ben Elston (Network Rail)	11:30am
Closing Comments	Rupa Bhatt (Network Rail)	11:55am

Steve Elderkin

Director of Environmental Sustainability

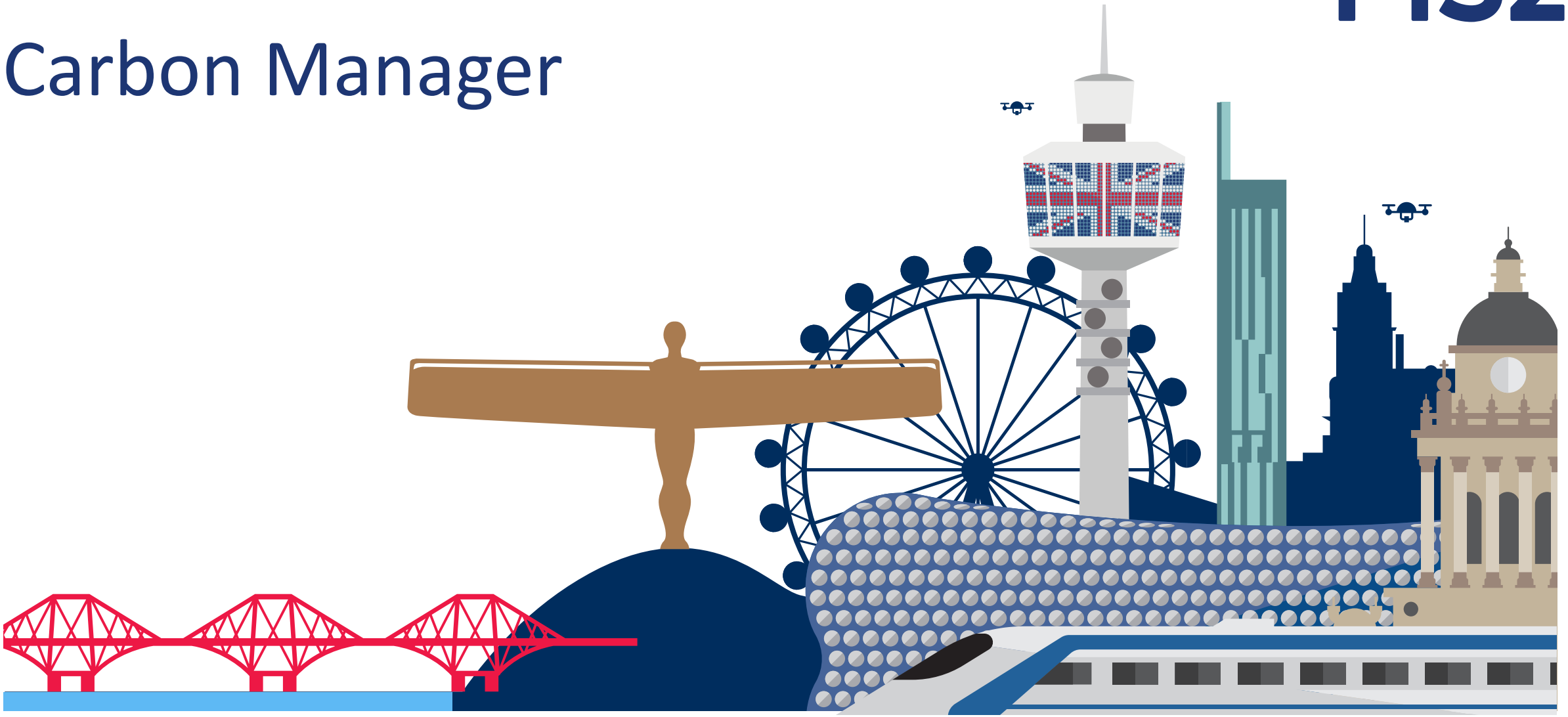
HS1

STEVEN VAN NIEKERK

Mark Fenton

Carbon Manager

HS2



James Ingram

Senior SHE Environment Manager

Christopher Harris

Carbon and Sustainability Manager

Network Rail Social Value

Louise Mackay

Social Value

Social Value Hub
for NR colleagues
on MyConnect

Rail Social Value Tool

Rail Social Value Tool: forecasts, reports and evaluates social value – including monetisation, gross value add, local multiplier and social return on investment (SROI)

Network Rail Social Value Framework: aligns with PPN06/20, applies Public Services (Social Value) Act 20212 and Welsh and Scottish government priorities

Commercial & Procurement Social Value Working Group: updating national process and tools to apply PPN06/20, UK Government Social Value Model, to procurement and supply management.

Training and Capacity building

External:

- Supply Chain Sustainability School (e.g. e-learning module "Social Value Part 1"). Suitable for current and potential suppliers (including small and medium enterprises) *and* NR colleagues

PPN 06/20

Summary

- PPN 06/20 introduced a new model to deliver social value through commercial activities focussing on the below 5 Outcomes
- Subsequent PPN's have introduced new requirements e.g. PPN 06/21 – Carbon Reporting

1. **Covid-19 Recovery**
   - help local communities to manage and recover from the impact of COVID-19
2. **Tackling economic inequality**
   - Create new businesses, new jobs and new skills
   - Increase supply chain resilience and capacity
3. **Fighting Climate Change**
   - Effective stewardship of the environment
4. **Equal Opportunity**
   - Reduce the disability employment gap
   - Tackle workforce inequality
5. **Wellbeing**
   - Improve health and wellbeing
   - Improve community cohesion

PPN 06/21

Summary

- PPN 06/21 introduced a new PQQ question set to monitor carbon reduction plans

Carbon Reduction Plans must meet the required standard as set out by the supporting guidance to this PPN. This includes, but is not limited to:

- Confirming the bidding supplier's commitment to achieving Net Zero by 2050 for their UK operations.
- Providing the supplier's current emissions for the sources included in Scope 1 and 2 of the GHG Protocol, and a defined subset of Scope 3 emissions.
- Providing emissions reporting in CO2e (Carbon Dioxide Equivalent) for the six greenhouse gases covered by the Kyoto Protocol4 .
- Setting out the environmental management measures in effect, including certification schemes or specific carbon reduction measures you have adopted, and that you will be able to apply when performing the contract and that support achieving Net Zero by 2050.
- Publication of the CRP on the supplier's website.

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Hitachi Environmental Strategy

Contribution to Sustainable Society

January 27, 2022

Alistair Dormer

Executive Vice President and Executive Officer Chief Environmental Officer
Hitachi, Ltd.

Today's Agenda

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1 | Our Contribution to Sustainable Society

2 | Hitachi Commitment to Carbon Neutral

- Aiming for world class ESG performance

3 | Environment x Digital = Engine & Growth

- Enabling the Energy Transition
- Enabling Carbon free Mobility
- Enabling Carbon free Industry
- Promoting the use of Renewable Energy

4 | Our Vision of the Future

1-1. Hitachi Environmental Innovation 2050

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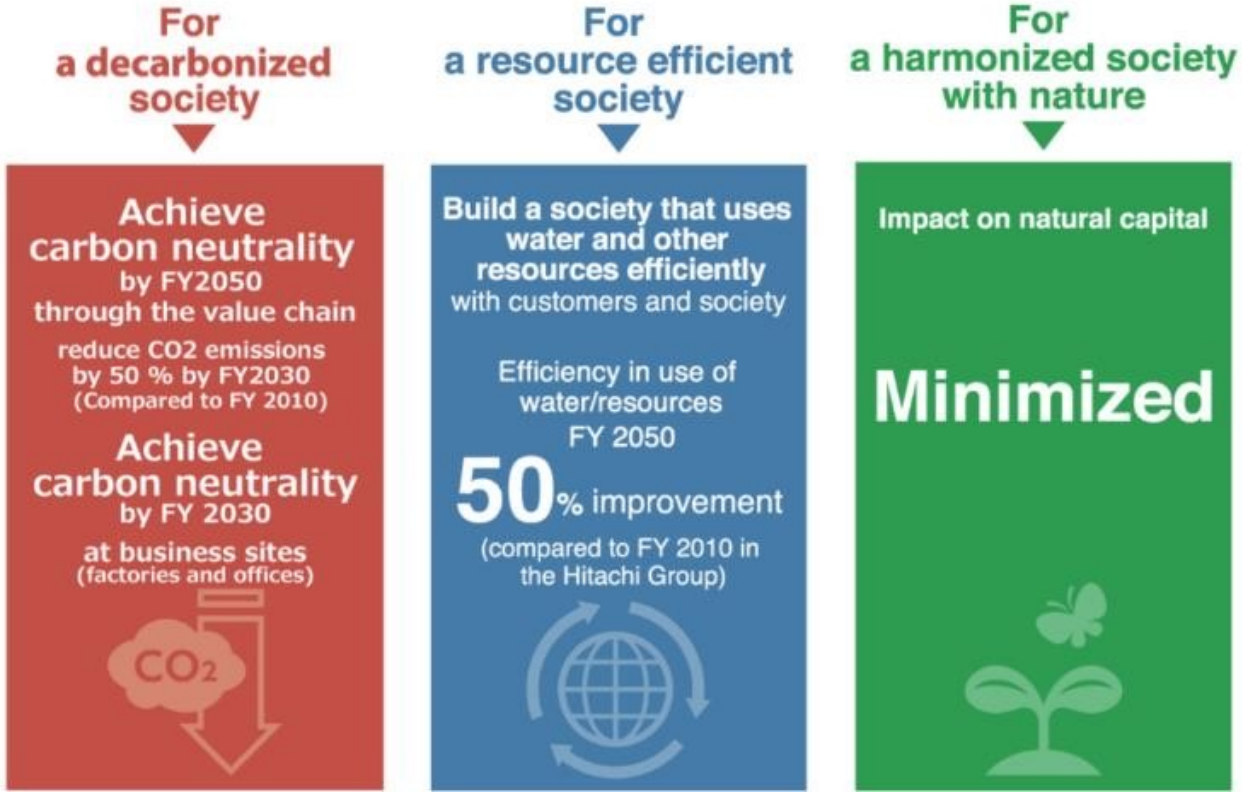
To realize a low-carbon society, resource-efficient society, and a society harmonized with nature, which constitute the society set forth by its Environmental Vision, Hitachi established long-term environmental targets called Hitachi Environmental Innovation 2050.

Environmental Vision

Hitachi will resolve environmental issues and achieve both a higher quality of life and a sustainable society through its Social Innovation Business in collaborative creation with its stakeholders.

The aim of Hitachi's environmental management

Long-term Environment Targets: Hitachi Environmental Innovation 2050



1-2. Climate Change Innovator – at the heart of our approach

Climate Change Innovator

Our ambition is to become a climate change innovator by helping governments, cities and companies to cut carbon. The breadth of Hitachi allows us to combine information technology, operational know how and physical products to tackle climate change - and ultimately improve people's quality of life. We are applying that same innovation to our own business to contribute to a Net Zero society.

1-3. As a Principal Partner: COP26

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2-1. Our Commitment: Carbon Neutrality 2030 (Scope 1&2)

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Hitachi Carbon Neutrality 2030

Hitachi will become "Carbon Neutral" by FY2030 in global operation* (*Factories and office)

1) Action

- Global best practice deployment to minimize factory energy consumption
- Pool purchasing of renewable energy by region to minimize cost
- Minimize requirement of carbon credit purchase

2) Investment

- Invest 84 B¥ for 10years to implement the action plan.
- This action plan to minimize energy consumption will reduce electricity consumption by 22% and reduce CO2 by 24% over 10 years. (ex listed companies)

3) External Validation

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Sept. 2018 – Committed to achieving SBT Dec. 2020 – SBT approved across value chain

'Hitachi, Ltd. commits to reduce absolute scope 1 and 2 GHG emissions 100% by 2030 from a 2010 base year.'
'Hitachi, Ltd. also commits to reduce absolute scope 3 GHG emissions 40% over the same time frame'
GHG: Greenhouse Gas

4) Leading Carbon Neutral Site

High-Tech Corporation
3 sites

■ Became carbon neutral factory in FY2020

✓ By switching all electricity to renewable

Central Research Laboratory
"Kyōsō-tō" (a research building)

■ Will become carbon neutral in FY2021

✓ By using renewable energy power

✓ New building "Kyōsō-tō" will become carbon neutral

5) Incentive

- Introduction of Executive pay link to Environmental performance from April 2021
- Strengthening "Hitachi Internal Carbon Pricing" system, introduced from FY2019

2-2. Hitachi's Contribution to Carbon Neutrality 2050

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Hitachi set the Carbon Neutral target by FY2050 through the value chain

And will contribute to realize the Carbon Net Zero society by 2050 through its "Social Innovation Business"

Measurement

1)Hitachi will take actions to create green innovation together with its customers, partners and other stakeholders 2)70% by value of Supply Chain (exc. listed subsidiaries) engaged to develop CO2 reduction plans from FY2021

Participating Initiatives (Joint Action)

BUSINESS AMBITION FOR 1.5°C

Race To Zero Campaign

Zero-emission Bay
Tokyo Zero-emission Innovation Bay

wbcsd
SOS1.5 Project

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

2-3. Supply Chain –Responsible Procurement

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Number of Hitachi Group Suppliers

(as of March 2021)

Around 30,000 companies

66 Countries

Rate of local procurement of materials for main regions

China 98%

Rest of Asia 77%

Europe 80%

Americas 70%

Supporting carbon neutrality – 70% of suppliers to have CO2 reduction plans

(based on total amount of transactions (not including subsidiaries))

Supplier Engagement:

COP26 – Hitachi Value-Chain Innovators Event

- **1,500 viewers**
- **3 time zones - Asia, EMEA and Americas.**

Hitachi Rail

Supplier Distribution

- 53% Europe
- 20% Asia Pacific
- 19% Americas

Investing in Digital Supply Chain Management

Supplier Guidelines and Standards

Supplier Mapping

Supplier Monitoring

3-1-1. Enabling the Energy Transition

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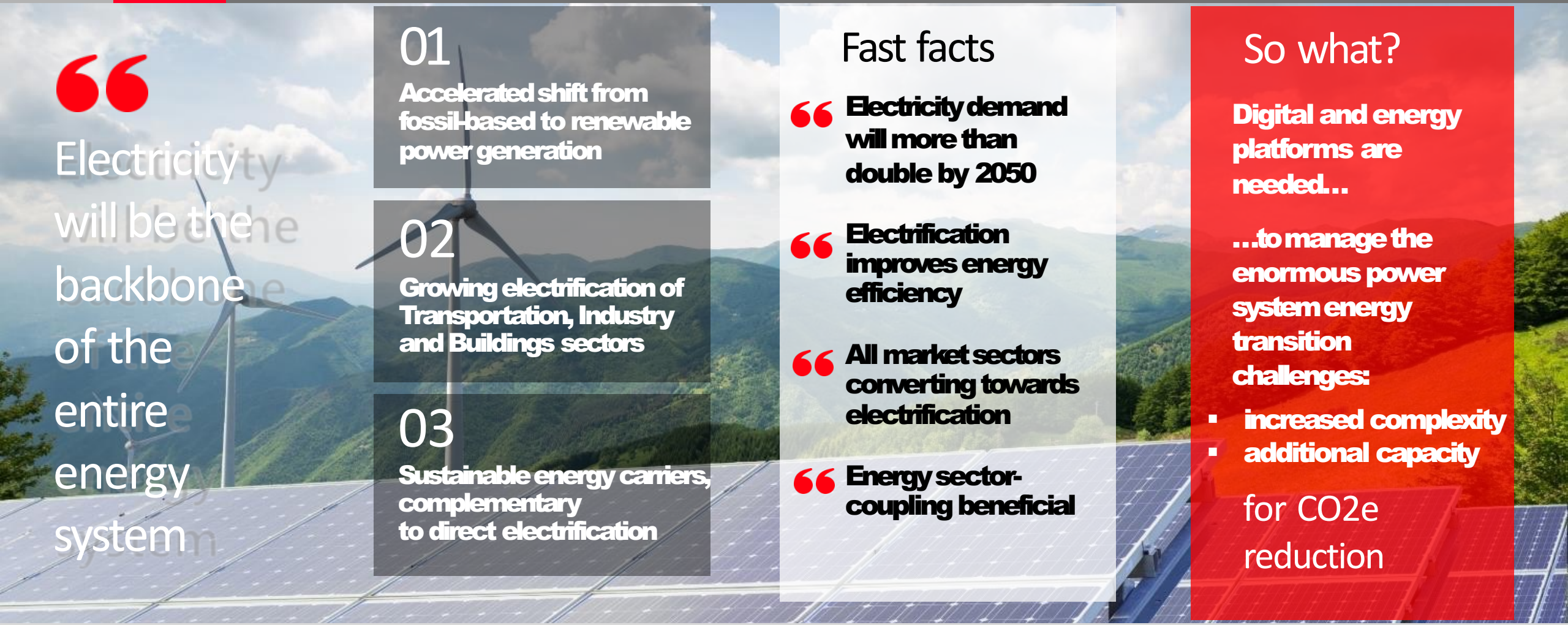

"Electricity will be the backbone of the entire energy system

01
Accelerated shift from fossil-based to renewable power generation

02
Growing electrification of Transportation, Industry and Buildings sectors

03
Sustainable energy carriers, complementary to direct electrification

Fast facts

- **Electricity demand will more than double by 2050**
- **Electrification improves energy efficiency**
- **All market sectors converting towards electrification**
- **Energy sector-coupling beneficial**

So what?

Digital and energy platforms are needed…

…to manage the enormous power system energy transition challenges:

- **increased complexity**
- **additional capacity**

for CO_2e reduction

Accelerating the transition to a carbon neutral energy system requires adapting and adopting policies and regulations to enable technology and new business models to support stronger, smarter and greener electricity systems.

3-1-2. Hitachi Energy is Highly Credible with Growing Global Opportunities

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Sustainable

Accessing clean electricity
Powering sub-Saharan Africa's largest solar venture in Angola

Energizing NordLink **Norway-Germany HVDC link integrating renewables to support Europe's carbon-neutral vision**

Supporting sustainable mobility
e-bus pilot at IIT Madras campus with Ashok Leyland, India

Strong

Pioneering Innovation
High-voltage hybrid switchgear for offshore wind in China

Collaborating for success
Teaming up with Tensio TN A/S to deliver Norway's first fully digital, eco-efficient substation

Powering six million homes **and accelerating UK's green energy transition with a new contract for the world's largest offshore wind farm**

Safe & Secure

Enabling power security
Substation control & monitoring for 33 substations with advanced cyber security solution in Dubai

Optimizing rail networks
Innovative technologies to optimize asset performance for high-speed rail network, UK

Facilitating Data centers
1 gigawatt high-voltage substation to serve Dublin's data center boom

Providing sustainable energy solutions for society

3-2-1. Hitachi's Strong Smarter Green Mobility Offering

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"The only methods more environmentally friendly than trains are walking and cycling

01
The transportation sector is responsible for more than 20% of CO2 emissions globally.

02
Global Plugin Vehicle Sales Up 43% In 2020, European Sales Up 137%

03
Rail transport is key to sustainably, emissions per kilometer on rail transport is 80% less than cars.

Fast facts

"**A typical train line can carry 50,000 people per hour. Compare this with a freeway lane, which can move only 2,500 people per hour.**

"**Battery-powered buses record up to 70 percent lower GHG emissions than their fossil fuel counterparts.**

So what?

Rail and bus transportation currently only represents about 20% of the passenger transportation and is seen as a significant growth market. With Hitachi's carbon free mobility solutions, it is well positioned to take advantage of this environmentally friendly sustainable growth market.

Right product offering to take advantage.

3-2-2. Enabling Carbon Free Mobility - Rail

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Battery hybrid train in the UK

- **Partnership with Hyperdrive**
- **London-Penzance intercity route**

HYPERDRIVE

Battery tram in Florence

- **Trial in Florence**
- **Reduced cost and disruption in city centres**

Battery hybrid train in Italy

- **Masaccio commuter service**
- **43 trains ordered**

Hydrogen prototype in JAPAN

- **East Japan Railway and Toyota partnership**
- **HYBARI* prototype to be launched in 2022**

Turning one intercity train into battery hybrid on the London to Penzance route saves 240 tons of CO_2 p.a. (equivalent of 12k trees, 180 passenger cars)

* HYdrogen-HYBrid Advanced Rail vehicle for Innovation

3-2-3. Enabling Carbon Free Mobility - EV

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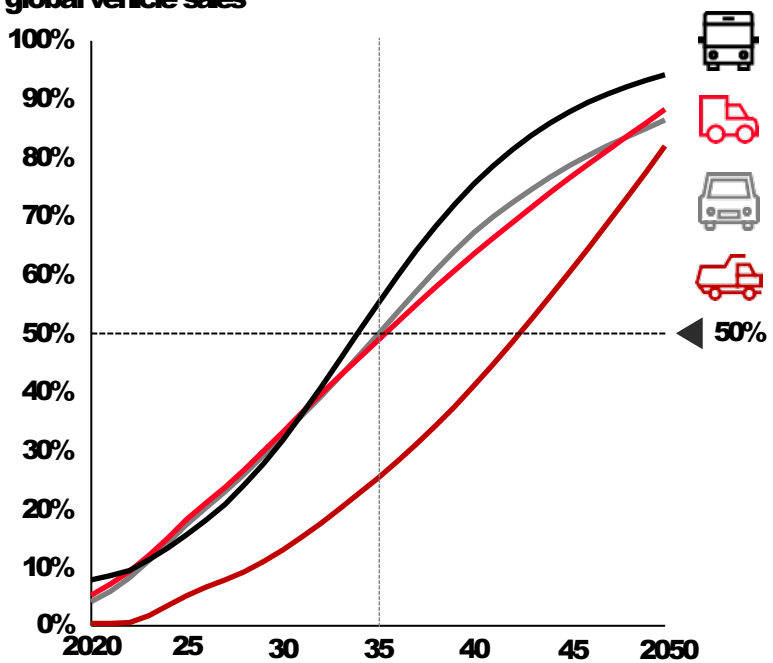
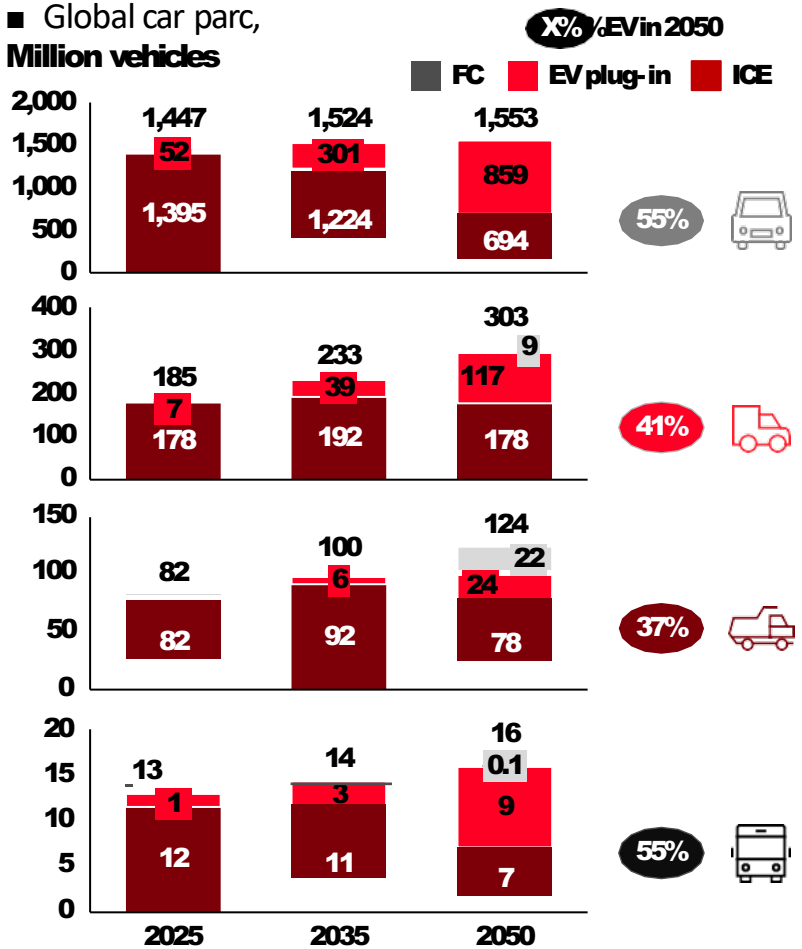
■ EV sales uptake by segment*1
%of global vehicle sales



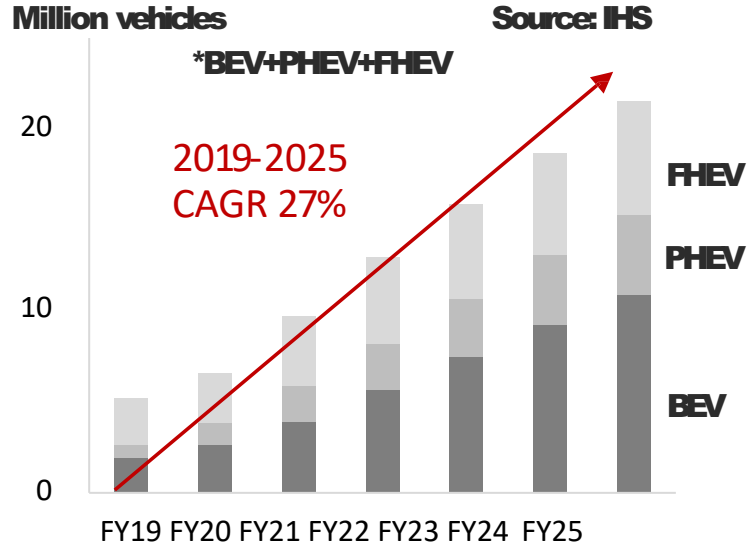
	2020	25	30	35	40	45	2050
EU charger #* [2]	2m	10m		49m			126m
Global charger # *2	5m	26m		123m			384m

*1 EV= BEV+ PHEV+ FC
*2 Includes Passenger cars, LCVs, trucks and buses
Source: McKinsey Energy Insights' Global Energy Perspective, October 2020

■ Global car parc,
Million vehicles



■ xEV global market forecast (production)



FC: Fuel Cell
ICE: Internal Combustion Engine
BEV: Battery Electric Vehicle
PHEV: Plug-in Hybrid Electric vehicle
FHEV: Full Hybrid Electric vehicle
CAGR: Compound Average Growth Rate

Astemo
Advanced Sustainable Technologies for Mobility
Launched to make the world a better place

Globally, EVs will dominate vehicle sales across Bus, car fleet, and LCV segments within 15 years

3-2-4. Digital Enablement for EV Bus and EV Fleet Operators

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Our Solution

Bus operators | Fleet operators | Depot operators

Subscription-based guaranteed service-ready availability of the vehicle/infra "As a Service"

EBaaS	EVaaS	EDaaS
eBus as a Service	**eVehicle as a Service**	**eDepot as a Service**

Hardware	Asset Management Services	Finance
Vehicle	**Planning/ Modeling**	**Leasing**
Charger	**O&M**	
RE	**Deploy**	**As a Service**
Grid infra		

Digital Enablement

Solution and Revenue Elements

EBaaS: Bus fleets and depots – **providing electric bus and electrified depots for bus operators;**

EVaaS: LCVs, private vehicles, depots and workplaces - **turnkey provision of electric LCVs, electric private vehicles and charging infrastructure**

EDaaS: Depot - **motorway, hub charging and port charging hubs, providing remote and guaranteed charging facilities for logistics and large vehicle fleets.**

Business Model and Revenue Mix

Fully Integrated subscription charge of per vehicle/per month/per mile incorporating:

1. Asset Fee **(Vehicle, Charger and Battery) – sale commission from Lease company or OEM**
2. Asset management Services **–asset, operations and maintenance optimisation**
3. Digital Enablement – **Fully integrated SaaS suite of applications enabling different levels of optimised service**
4. ICE Fleet Optimisation & EV transition – **services and solutions to optimise, plan and deliver EV transition**

Our solution proposes a "Turnkey" service to fleet operators providing services across the value chain

3-3-1. Smarter Green Industry Transformation

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There is an increasing trend in manufacturing companies to prioritize environmental impact reduction due to growing international attention on global warming and stricter environmental regulations

01

Manufacturing represents 54% of the world's energy consumption and is responsible for 20% of global emissions.

02

More consumers/companies are making their purchasing decisions based on the environmental stance of companies they do business with.

03

Effective carbon-neutrality strategies must address the entire life cycle of the product.

Fast facts

- **Nearly 25% of Fortune Global 500 companies have made a commitment to reduce their net greenhouse gas emissions to net-zero by 2030.**
- **Digital technologies could help reduce global CO2 emissions by up to 15%.**
- **65% of consumers are willing to stop using their favourite products if they aren't sustainable.**

So what?

The companies best positioned to successfully navigate this trend are those that embrace advanced manufacturing technologies and solutions across their factories and supply chains, creating value and improving operations while also increasing sustainability.

Hitachi can be a partner for both digitalization and decarbonization.

3-3-2. Enabling Carbon Free Industry

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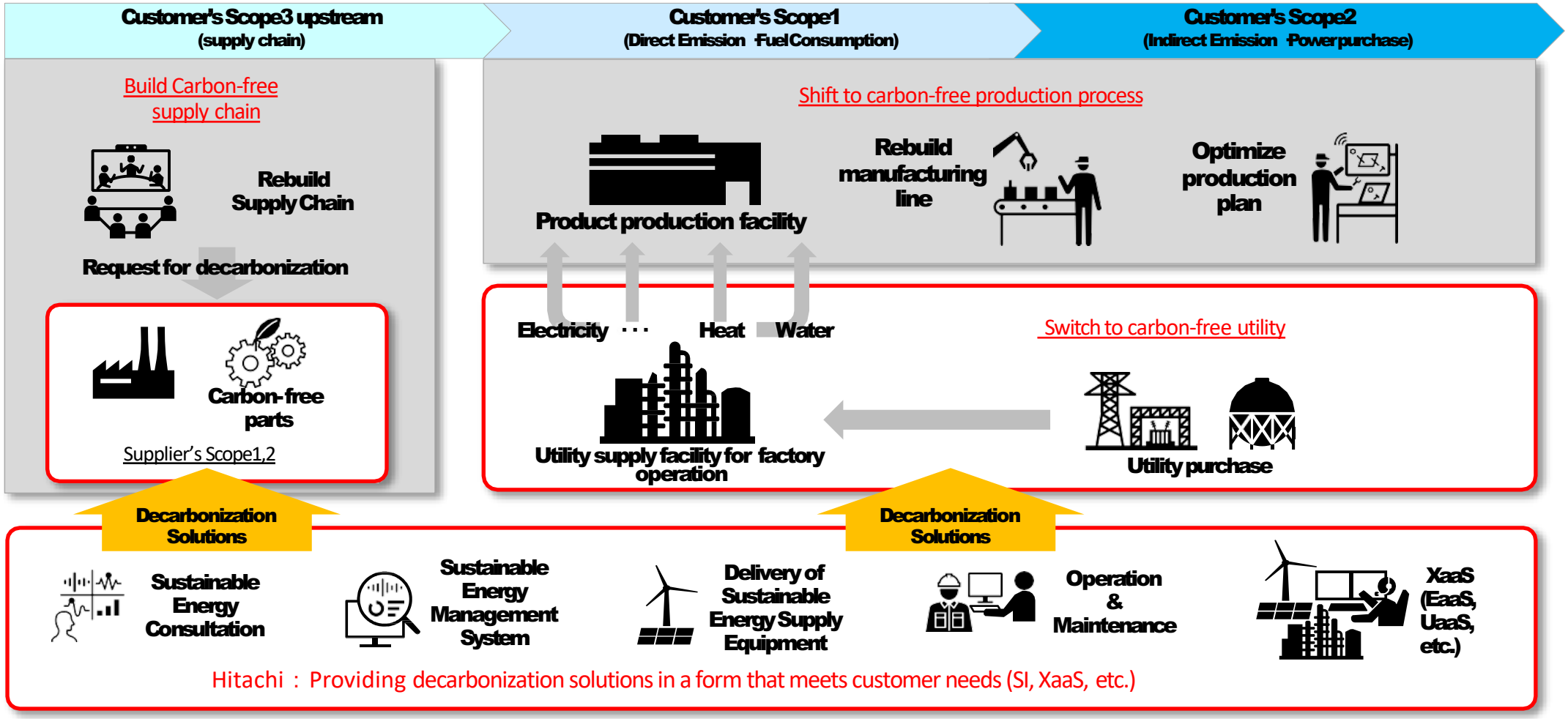
Contribute to focusing customer resources on key issues by providing decarbonized solutions for Scopes 1and 2



3-4. Promoting the use of Renewable Energy

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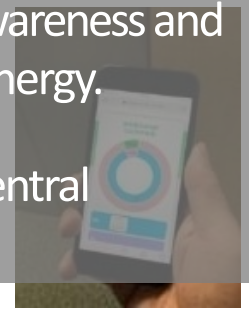
- ✓ Develop a system to visualize the use of renewable energy for each facility and service.
- ✓ Started operating a system to certify the use of 100% renewable energy as "Powered by Renewable Energy."

By using smart meters and blockchain technology, we can visualize how much renewable energy is being used on a per- building and per-facility basis.

It is possible to visualize that 100% of the electricity used in each detailed building or production line is from renewable energy sources, contributing to raising corporate environmental awareness and promoting the use of renewable energy.

Hitachi started use this system at Central Research Laboratory from Feb. 1st



5. Hitachi will lead GX by our green and digital technology

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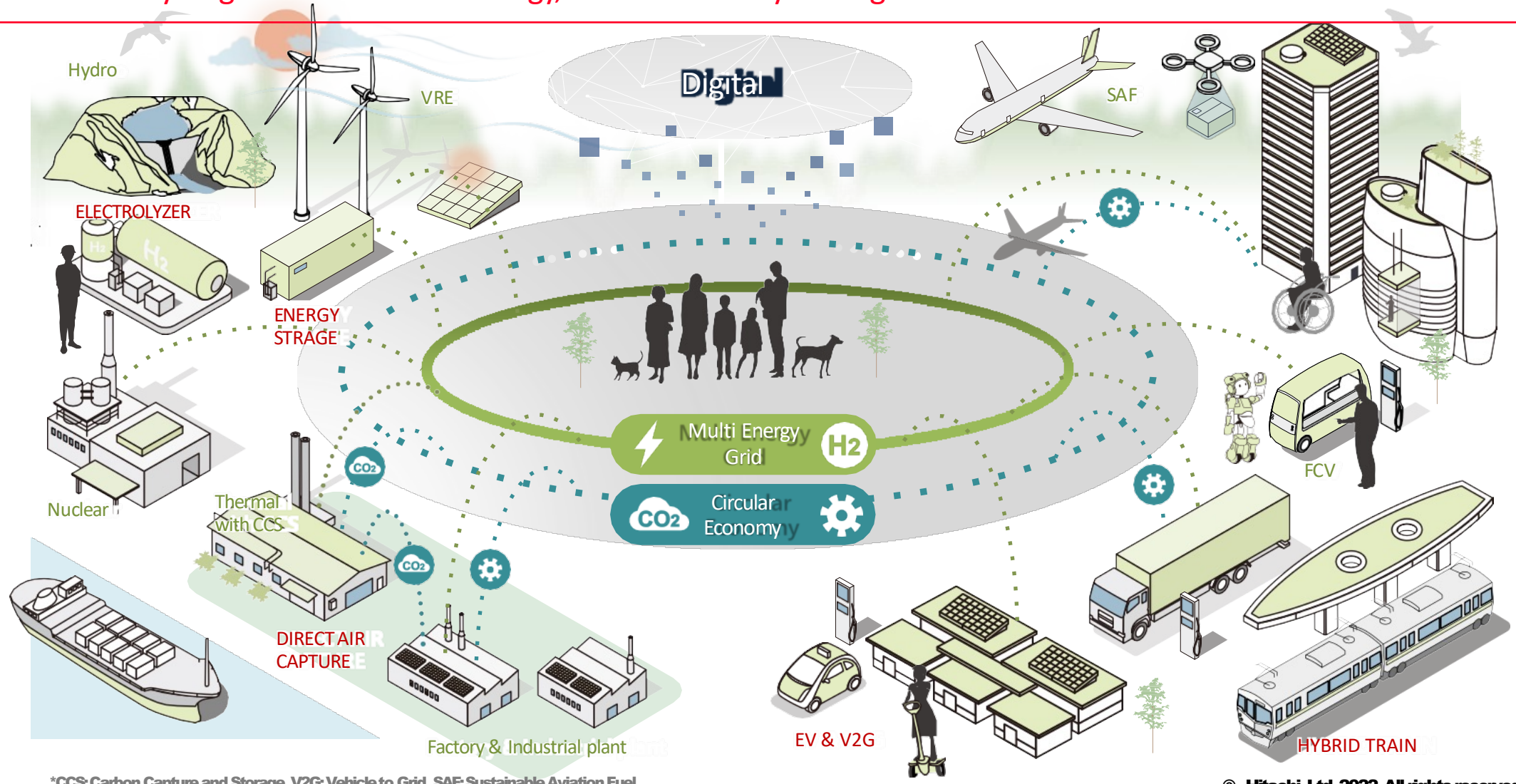
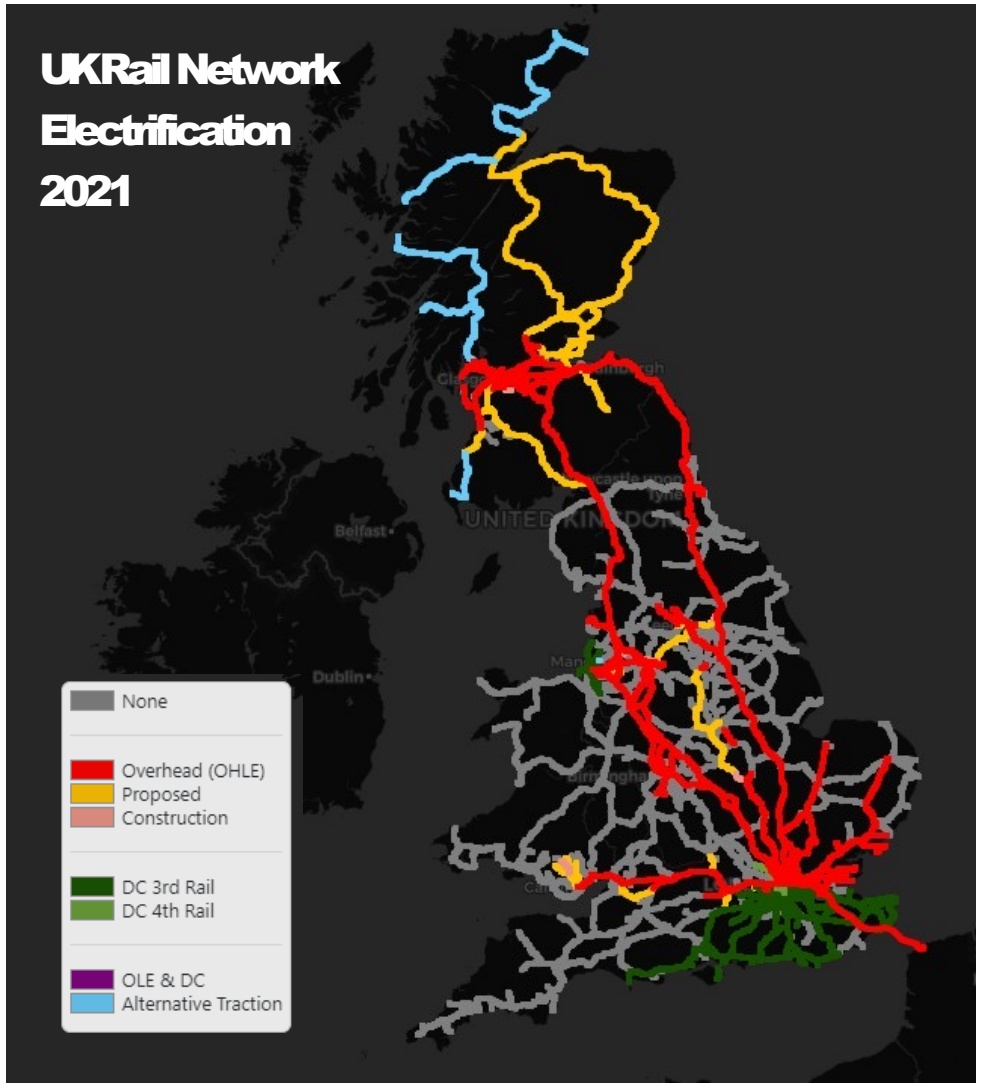
Hitachi will lead GX (Green Transformation) and contribute to realization of sustainable society by electrification, hydrogen and renewable energy, circular economy and digital.



*CCS: Carbon Capture and Storage, V2G: Vehicle to Grid, SAF: Sustainable Aviation Fuel

Appendix 1. UK Rail Decarbonisation Strategy 2040



Decarbonising our railways

We will deliver a net zero railway network by 2050, with sustained carbon reductions in rail along the way. Our ambition is to remove all diesel-only trains (passenger and freight) from the network by 2040

We will deliver an ambitious, sustainable, and cost-effective programme of electrification guided by Network Rail's Traction Decarbonisation Network Strategy

We are supporting the development of battery and hydrogen trains and will deploy them on the network as we decarbonise. We will also use technology to clean up diesel trains until they can be removed altogether

We are building extra capacity on our rail network to meet growing passenger and freight demand and support significant shifts from road and air to rail

We will work with industry to modernise fares ticketing and retail to encourage a shift to rail and cleaner and greener transport journeys

The Challenge Ahead

- **The UK Rail decarbonisation strategy was issued in July 2021**
- **It sets ambitions targets from 2040 for a fully decarbonised rail network**
- **The UK Rail electrification map 2021 illustrates significant parts of the network will require infrastructure upgrade inclusive of additional power supply and associated overhead catenary**
- **The associated cost, resource and time required to achieve the targets set out by the UK Government has led to alternative solutions such as discontinuous or an optimized electrification strategy supported by battery and or hydrogen rolling stock**

Source: Electrification - Rail Maps

Source: decarbonising-transport-a-better-greener-Britain

Appendix 2. UK Rail Decarbonisation Strategy 2040

Hitachi Rail UK Footprint

- **Hitachi currently operates 286 trains in the UK and our products carry 626 diesel engines with more in manufacture**
- **Aligned to the UK Government challenge we are therefore required to work alongside Train Operators, Network Rail and Financiers to find solutions by 2040 to support decarbonisation of the UK rail network**
- **The clear target is to remove all diesel engines during this period either by infrastructure investment, alterations to trains, or both.**
- **Hitachi is uniquely placed to with capability in Rail, Energy and Social Innovation to deliver an optimized and turnkey solution**

UK Rail Operation	Hitachi Trains	Diesel Engines
Lumo	5	0
Hull Trains	5	15
Great Western Railway	93	349
London North Eastern	65	167
London South Eastern	29	0
Transpennine Express	19	95
ScotRail	70	0
TOTAL	286	626

Appendix 3. Great Western Railway - UK

The Great Western Route Modernisation

Great Western Railway

- **We operate 93 trains with 349 diesel engines across a route that incorporates distances as long as 253 miles (407km) from London to Penzance**
- **Full electrification would be technically complex, expensive and time consuming while battery replacement alone would not provide the same journey time as current diesel operation**
- **Co-creational route analysis between infrastructure manager and rolling stock manufacturers opens up the possibility of optimized discontinuous electrification or alternative charging solutions if trains are adapted to replace diesel engines with batteries**

Appendix 4. Battery Train Technology

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Diesel Engine Replaced with Battery Box

Hitachi Rail Battery Train Technology Development

- **Hitachi Rail is already in the process of trials for battery train technology in the UK**
- **The process involves the removal of an existing Diesel Engine, fuel tanks and exhaust system which are in turn replaced with a battery box, roof mounted cooling system and additional fire protection system**
- **The battery train technology uses automotive battery cells that are connected to deliver 1000 kW or 700 KWh. This onboard storage is charged via the standard overhead wire connection or regenerative braking**
- **Hitachi Rail are working alongside development partners Envision and Hyperdrive in support of the performance trials set for Autumn 2022 on the Great Western rail network**

Envision Battery Cell

Provided by Envision in UK, USA, China and Japan. The same battery cells are used in Nissan Leaf

Hyperdrive Battery Unit

The Hyperdrive battery unit can be connected in any configuration based on the battery requirement.

Hitachi Rail Battery Box

The Hitachi Rail battery box will integrate all train level control and fire protection

Appendix 5. Alternative Train Charging Solutions

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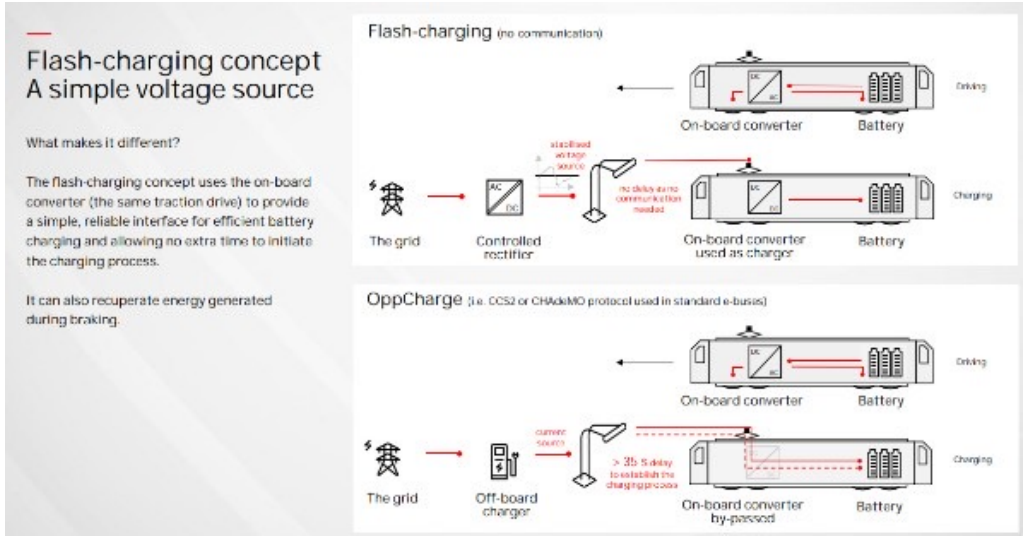
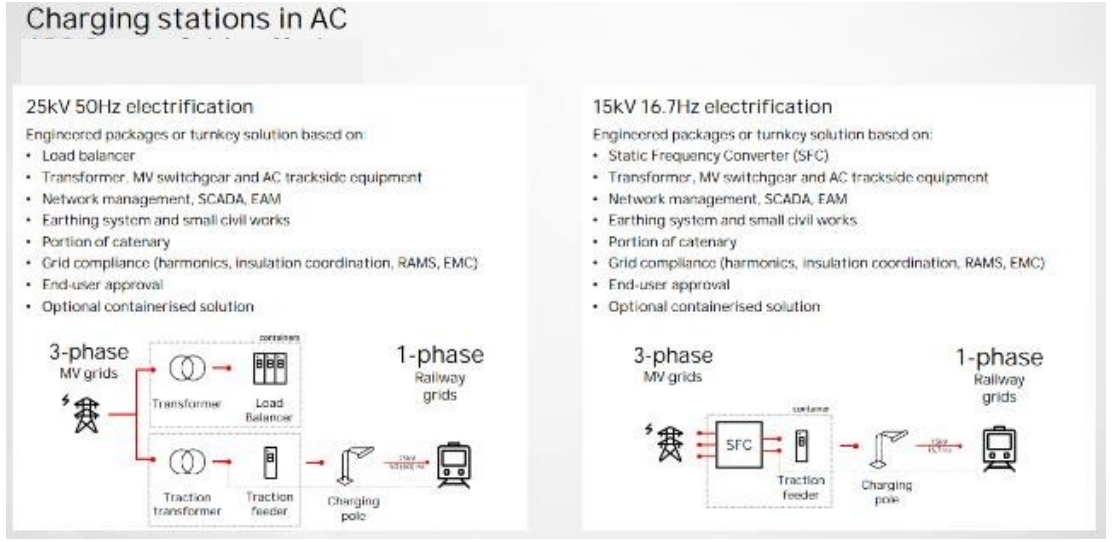
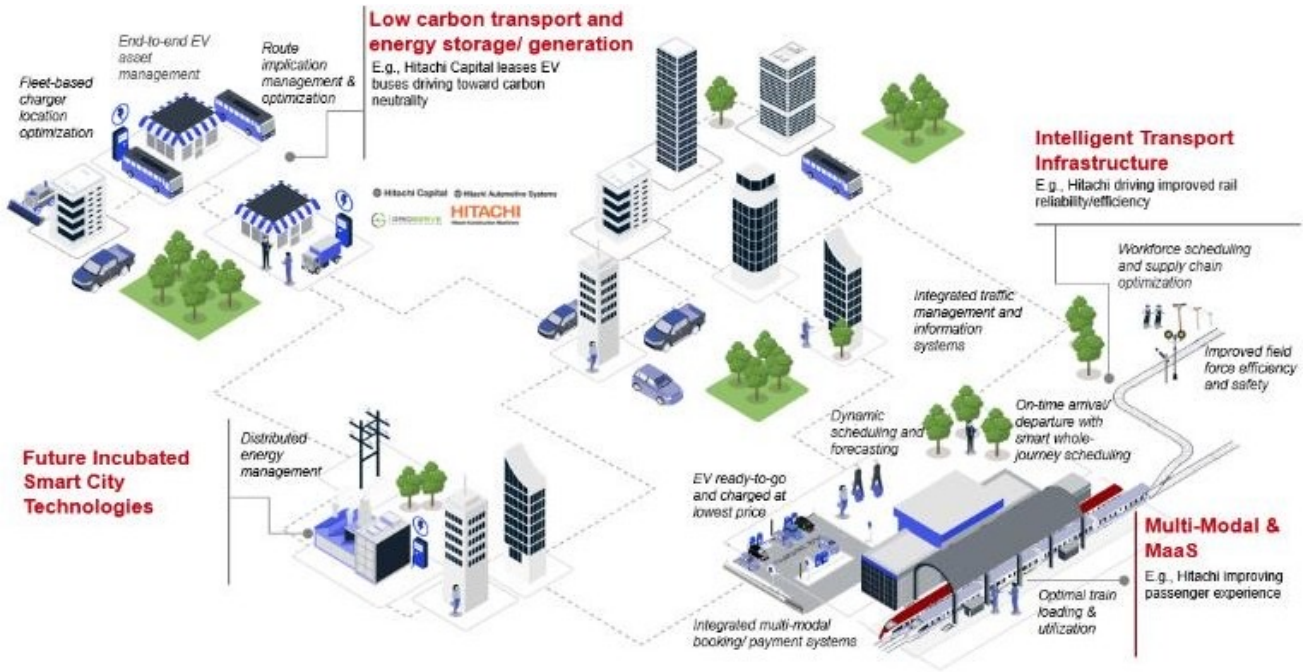
Hitachi Energy – Rapid Charging Solutions

- **Hitachi Energy offer within their product portfolio rapid charging solutions in both DC & AC power configurations**
- **The rapid charging TOSA system has successfully deployed for electric battery buses and similarly can be used an alternative and economical charging solution for battery trains**
- **By placing rapid chargers at specific route locations on the Great Western rail network such as end of route stations and or maintenance depots the onboard battery storage can provide the same level of performance as an existing diesel solution**





Appendix 6. Intelligent Transport Infrastructure



Intelligent Transport Infrastructure

- **The Social Innovation Mobility Accelerator (MA) team based in the UKhave been tasked with looking at where value exists beyond the individual Hitachi business units**
- **With a focus on Low Carbon Transport, Smart Cities and Intelligent Infrastructure the MA can use Lumada based principles to support the Hitachi Rail and Hitachi Energy businesses in applying optimized energy management control software as a service to reduce the total energy demand on the Great Western Rail network while keeping reliable levels of performance**

Hitachi Social Innovation is

POWERING GOOD

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IN PARTNERSHIP WITH ITALY

Break

Use the 'Q&A' functionality to ask questions

Environmentally Sustainable Procurement

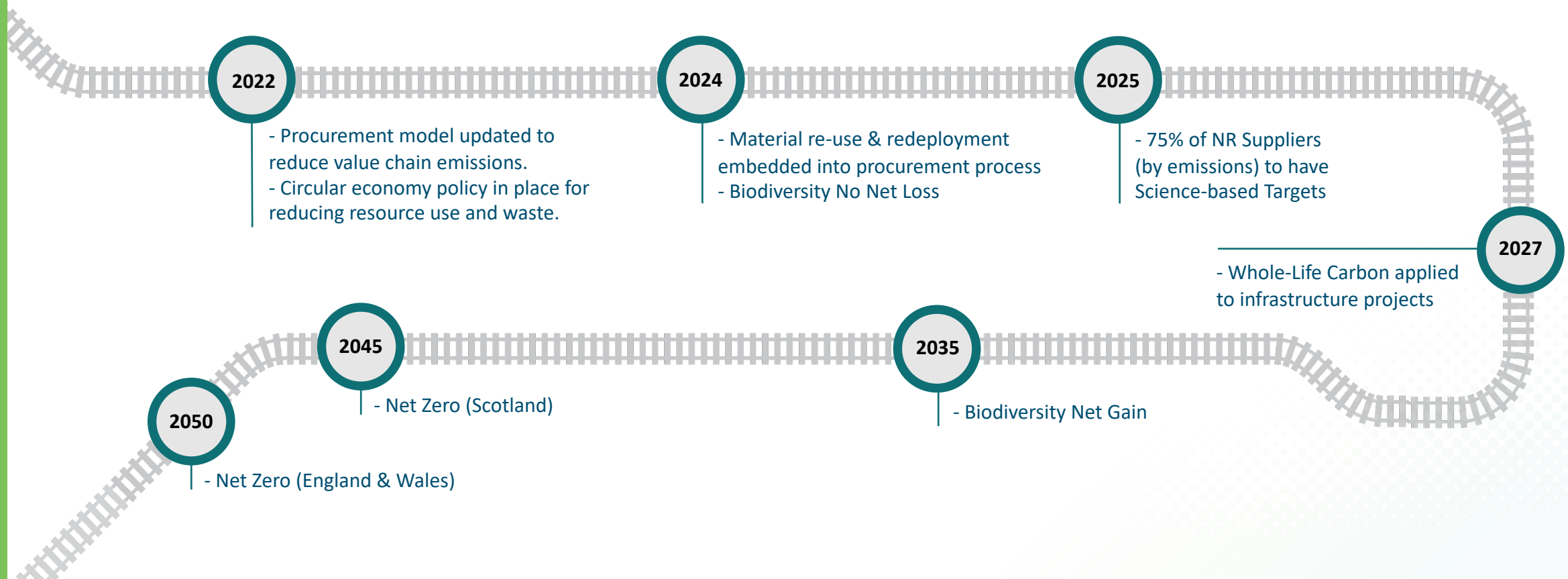
AMBITION

VISOIN

KEY MILESTONES

Enabling an Environmentally Sustainable & Socially Responsible Railway

Providing the most sustainable solutions (products & services) to our customers



2027

- NR tender evaluation to integrate environmental cost e.g. carbon pricing (i.e. kCO2e/£contract value)**
- Suppliers to align with PAS 2080 - Carbon Management in Infrastructure*
- Suppliers to align with ISO 50001 - Energy Management System*
- Suppliers to obtain BES 6002 Certification - Ethical Labour Sourcing*

2025

- 75% of Suppliers (by emissions) to have Science-based Targets (SbT) in place
- Suppliers to provide Carbon Reporting through agreed online platform**
- Suppliers to provide EPD/LCA for Products at tender stage*
- Suppliers to align with ISO 20400 - Sustainable Procurement*
- Suppliers to obtain BES 6001 Certification - Responsible Sourcing of Construction Products*

2024

- Suppliers to adopt NR Circular Economy Metric**

NR to strengthen its Suppliers Engagement on Sustainability (e.g. Workshops, Sourcing Pipeline, etc.)

2022

- NR to review & embed 'Carbon Exclusion Measure' Procurement Policy Note (PPN)**
- Suppliers to meet the requirements of NR Circular Economy Policy**
- Suppliers to meet NR Environmental & Social Minimum Requirements for Goods & Services**
- Suppliers to adopt Common Social Impact for Rail v02 / Rail Social Value Tool**

2021

- NR PQQ and ITT procurement process to integrate E&SD Risks & Opportunities**
- Additional Environmental & Social requirements integrated into NR Contracts (beyond minimum standard) and associated KPI's**
- Minimum 10% tender evaluation weighting of social value including sustainability in line with Social Value Procurement Policy Note (PPN)
- Suppliers to comply with NR Biodiversity Standard and adopt Biodiversity Metric*
- Suppliers to align with priorities & ambitions of NR Social Value Framework**
- Suppliers to provide a statement on their commitment to reduce carbon emissions and to work towards setting & publishing binding targets

Now

- NR Balanced Scorecard in place covering non-cost related value metrics including Sustainability
- Suppliers to meet NR Environmental & Social Minimum Requirements for Construction & Design, including adoption of the Rail Carbon Tool
- Suppliers to align their performance with NR Corporate Sustainability KPI's, including Greening Government Commitment*
- Suppliers to align their Environmental Management System with ISO 14001*
- Suppliers to publish annual modern slavery statement, when required by Modern Slavery Act 2015
- Suppliers to meet the requirements of NR Responsibly Sourced Timber Policy
- Suppliers to provide competent environmental resources on Capital Delivery projects in line with Principal Contractor Licensing Scheme

Engagement
Communication
Feedback
Shared Learning

HS2

Net zero carbon – a cleaner, greener future

Mark Fenton – Carbon Manager, HS2 Ltd

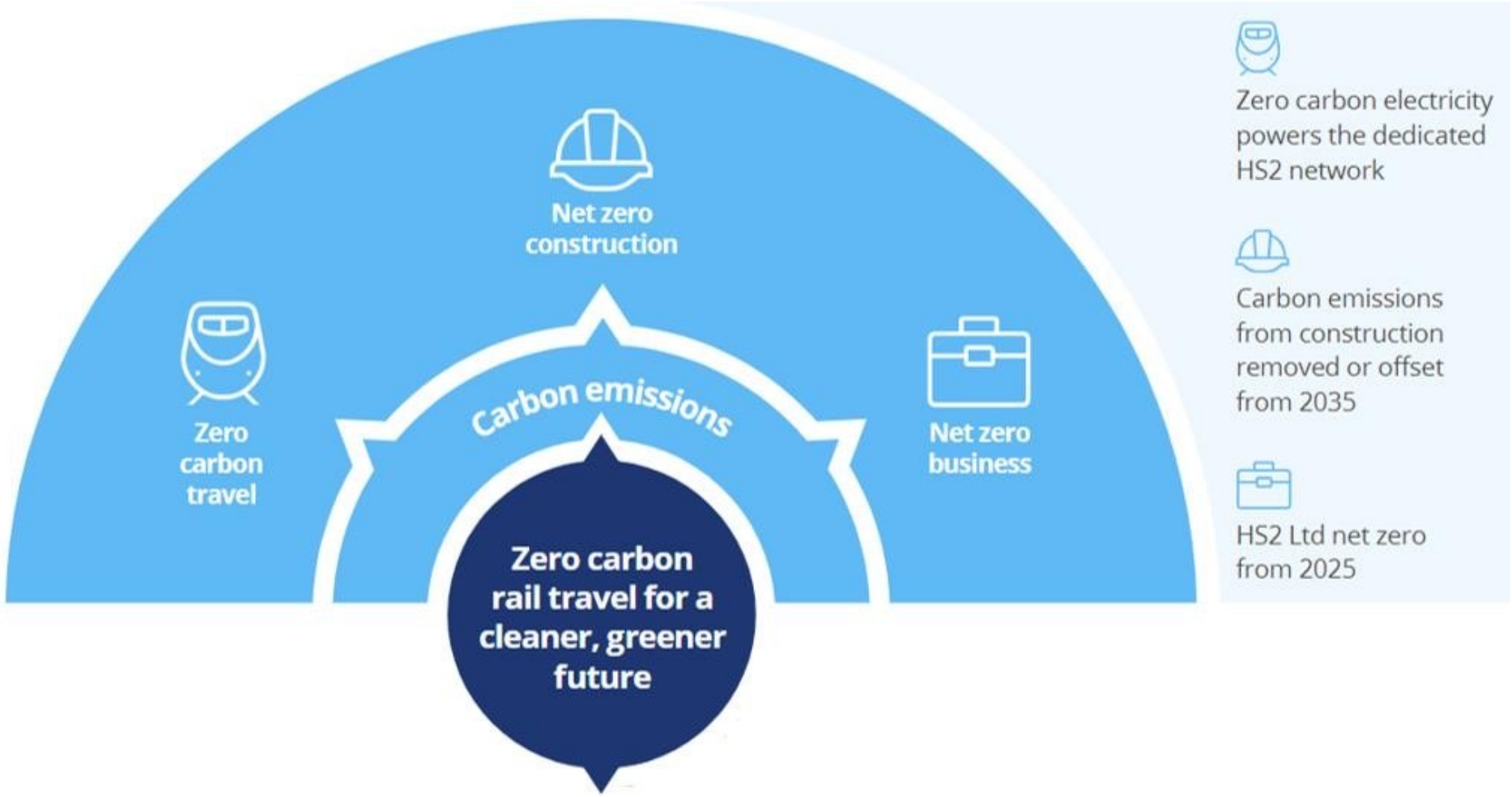
Why Britain needs HS2

More capacity

Cutting carbon

Better connectivity

Our vision


Net zero construction
Zero carbon travel
Carbon emissions
Net zero business
Zero carbon rail travel for a cleaner, greener future
Zero carbon electricity powers the dedicated HS2 network
Carbon emissions from construction removed or offset from 2035
HS2 Ltd net zero from 2025

Phase One carbon footprint

Construction material	Transport	Construction	Maintenance & replacement	Operational energy
49%	11%	13%	13%	14%

The journey so far

Carbon management

- PAS 2080 verified carbon management system;
- First transport infrastructure client to achieve accreditation;
- Supply chain required to work to the same best practice standard.

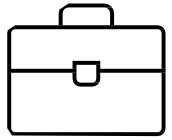
Carbon literacy

- Carbon Literate Organisation Bronze;
- Members of our Board and Executive certified as Carbon Literate;
- Training resources shared with suppliers.

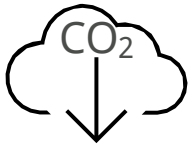
Carbon reduction

- 50% carbon reduction target in place since 2016;
- 25% reduction in carbon emissions by March 2021;
- Championing innovation, working collaboratively with suppliers.

The journey ahead

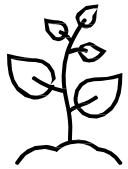


Net zero
For HS2 Ltd corporate activities by 2025



50% reduction
In carbon emissions by 2030

100%
Zero carbon electricity to power trains, stations, depots and infrastructure

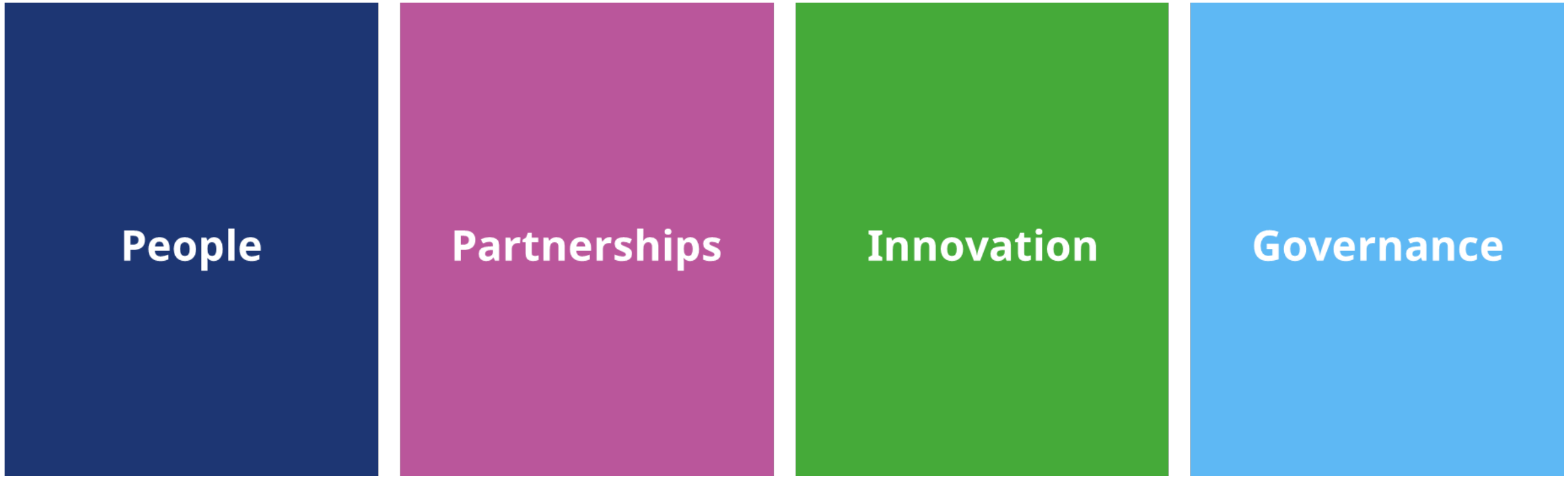


100%
Residual carbon emissions offset from 2035

Net Zero
Construction and operation from 2035

- Achieve net zero Scope 1 and 2 emissions by 2025
- Strategic suppliers to adopt science based targets by 2025
- All HS2 sites to be diesel-free by 2029 with our first diesel-free site in 2022
- Achieve a 50% reduction in carbon emissions from steel and concrete (tCO_2e/t) compared with 2021 by 2030
- Achieve an 11% reduction in HGV gCO_2e/km compared with 2020 by 2027
- Procure only zero carbon electricity from day one of HS2 operation
- Achieve net zero Scope 3 emissions from 2035, offsetting any residual emissions from this point.

The journey ahead



Thank you

Stay in touch

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More information online:

www.hs2.org.uk/why/carbon

Panel Q&A

Name	Role	Organisation
Steve Elderkin	Director of Environmental Sustainability	National Highways
Mark Emmett	Net-Zero Carbon and Environmental Sustainability Team Leader	National Highways
Christopher Harris	Carbon & Sustainability Manager	East West Rail
James Ingram	Senior SHE Environment Manager	Transport for London (TfL)
Alistair Dormer	Executive Vice President and Executive Officer Chief Environmental Officer	Hitachi
Steven Van Niekerk	Head of Assurance	High Speed 1 (HS1)
Mark Fenton	Carbon Manager	High Speed 2 (HS2)
Debra Parker	Safety Health & Environment Manager	Network Rail
Louise Mackay	Procurement Policy & Process Manager	Network Rail
Liz Holford	Sustainability Strategy Manager	Network Rail

If we do not get to answer your question today, we will follow up with you with the answer or alternatively please feel free to submit your questions to: ScienceBasedTargets@networkrail.co.uk

1st, 2nd, 3rd & 4th Workshop Recording & Documents have been uploaded to: :
https://www.networkrail.co.uk/industry-and-commercial/supply-chain/working-with-us/

We will be issuing a questionnaire shortly after the workshop. If you could please complete this, then we would be greatly appreciate feedback/ideas for future workshops!

If you have any further questions, then please send them to:
ScienceBasedTargets@networkrail.co.uk

Thank You