

# HILUX FUEL CELL CONVERSION PROJECT

**TOYOTA MOTOR MANUFACTURING UK LTD**



Katherine Chamberlain

Senior Manager, New Product Development

*"I commit to put all members safety first in everything I do"*

*'I will ensure all members feel included and if I see something I will say something"*

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# TODAY'S SUMMARY

**TOYOTA HYDROGEN STRATEGY**

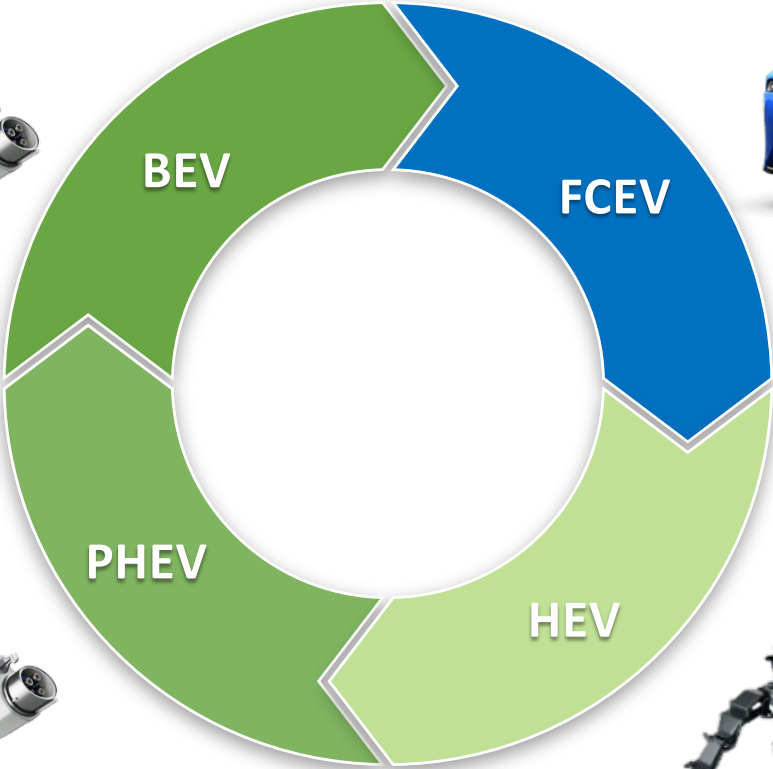
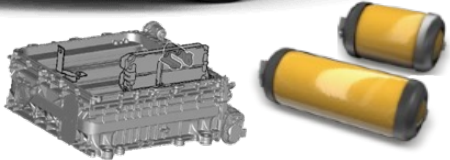
**WHY FUEL CELL HILUX?**

**PROJECT OVERVIEW**

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# OUR COMMITMENT: A CARBON NEUTRAL SOCIETY

**TOYOTA HAS MORE THAN ONE SOLUTION**



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# TOYOTA : WORKING TO CREATE A HYDROGEN SOCIETY

APPLICATIONS

## Production



Toyota – Denso Electrolyser

## H2 Transport



Source : Kawasaki Heavy Industries, Ltd. HP



## Use



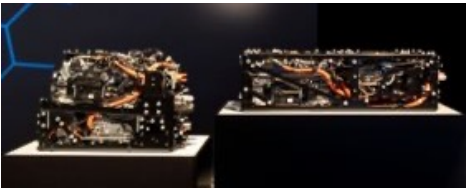
TECHNOLOGY



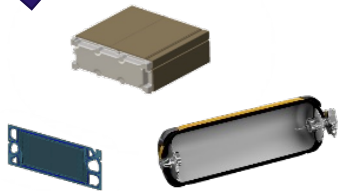
PEM Technology & IP



H2 Storage Modules



Fuel Cell Modules, H2 ICE & Components



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# ADVANTAGES OF HYDROGEN FOR LCV



Infrastructure density required for LCV is lower than PC



Strong performance requirements (range, payload, towing) that can not be fulfilled by BEV



Short refuelling time reduces wasted time for the business



Secure the operations in case of potential electricity grid issues

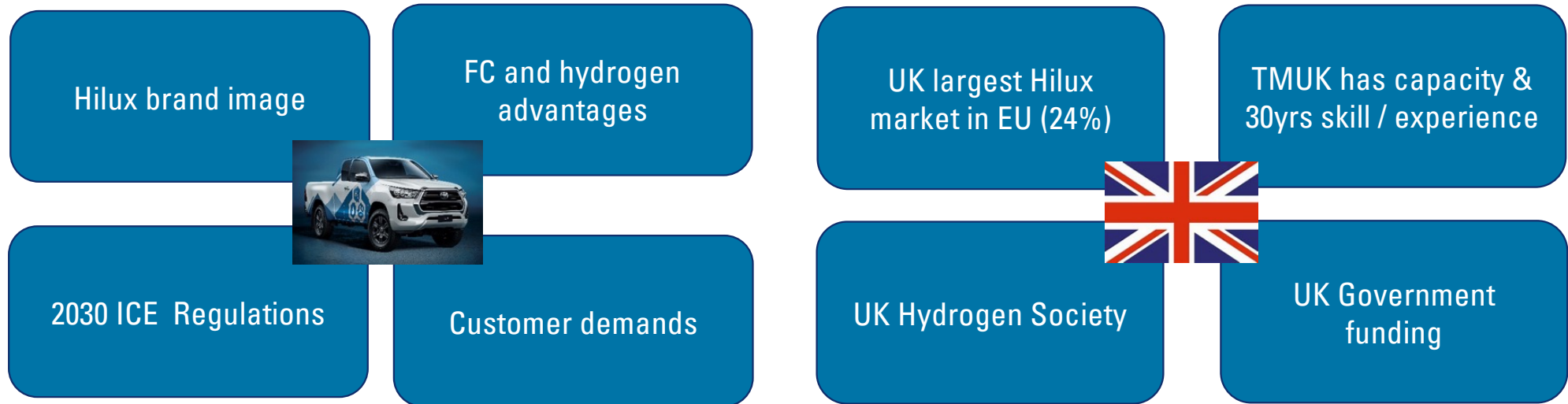


Lower weight of FC system → higher payload capacity



Companies (fleet) move faster to ZEV to meet Carbon Neutrality Targets

# PROJECT STRATEGY: WHY FUEL CELL HILUX IN THE UK?



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# FUEL CELL HILUX CONVERSION

## PROJECT SUMMARY

### Today's overview

- APC Funding
- Project content
- Project Master Schedule
- Target customers
- Public Relations

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# UK GOVERNMENT FUNDING: APC



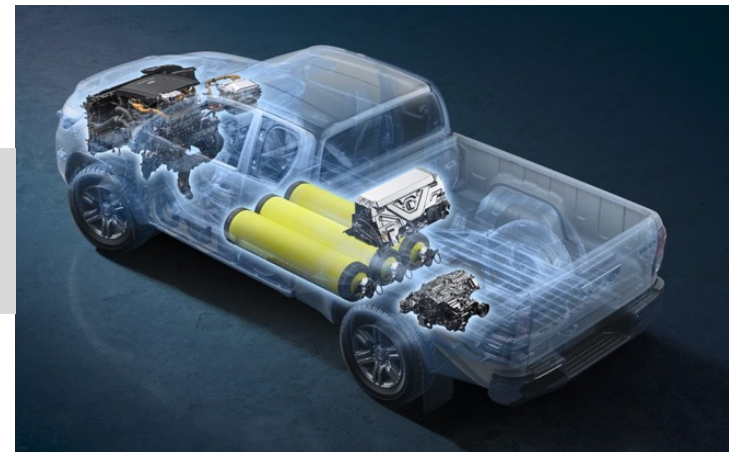
Innovate UK

## PROJECT CONSORTIUM



Thatcham  
Research

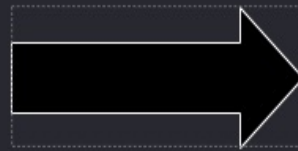
UK GOVERNMENT SUPPORT FOR  
DEVELOPMENT OF FC HILUX



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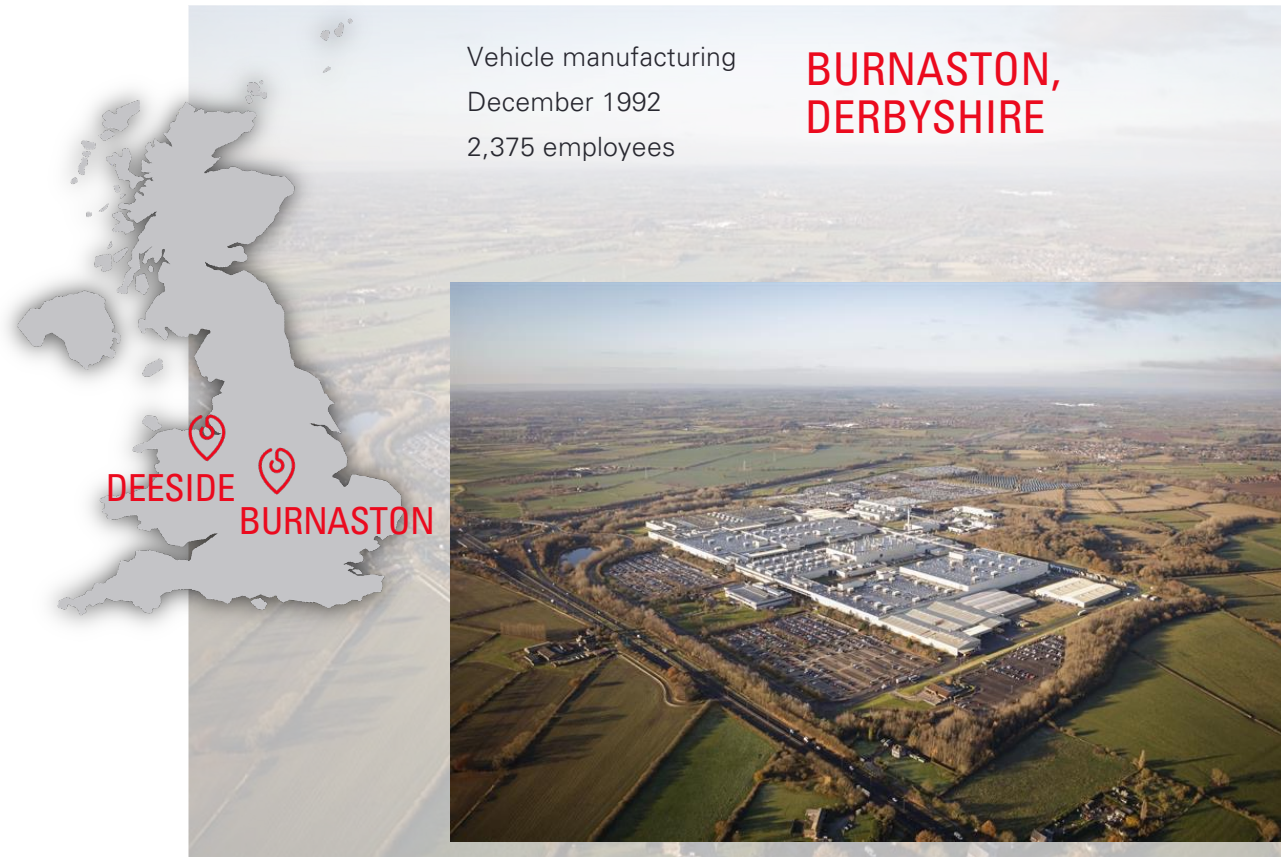
# FC HILUX CONCEPT



# TMUK

## FUEL CELL HILUX PROTOTYPE MANUFACTURING

- First FCEV in TMUK
- First Hydrogen project in TMUK
- First major conversion in TMUK
- First HRS onsite @ TMUK



Vehicle manufacturing  
December 1992  
2,375 employees

**BURNASTON,  
DERBYSHIRE**

DEESIDE  
BURNASTON

**TOYOTA**

# TMUK PREPARATION

## 1 Hilux & FCEV vehicle study



## 2 TMC benchmark visit

8 TMUK members visited TMC:-

- PC
- Assembly
- QA
- H & S



Motomachi Plant: **Mirai vehicle** production  
21<sup>st</sup>-24<sup>th</sup> March



Honsha Plant: **FC Stack** production  
24<sup>th</sup> March



Shimoyama Plant: **Hydrogen Tank** production  
27<sup>th</sup> March

TMUK MEMBER SKILL DEVELOPMENT

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# PROTO BUILD IN PROGRESS



HILUX DELIVERED



PREPARATION



PROTOTYPE BUILD



TMUK TEAM

# PROTOTYPE TESTING WITH ALIGNED COMPANIES

UK



GERMANY

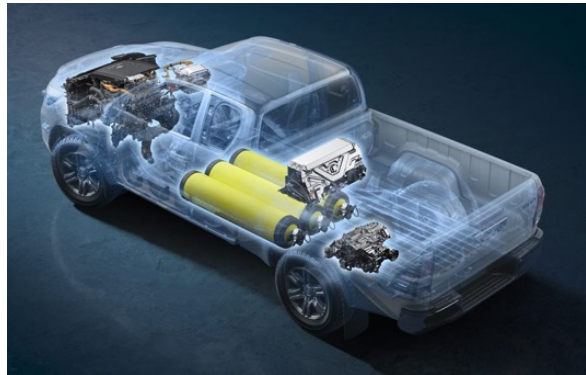


CLEAR COMPANY TARGETS TOWARDS  
2030 ZERO EMISSION VEHICLES

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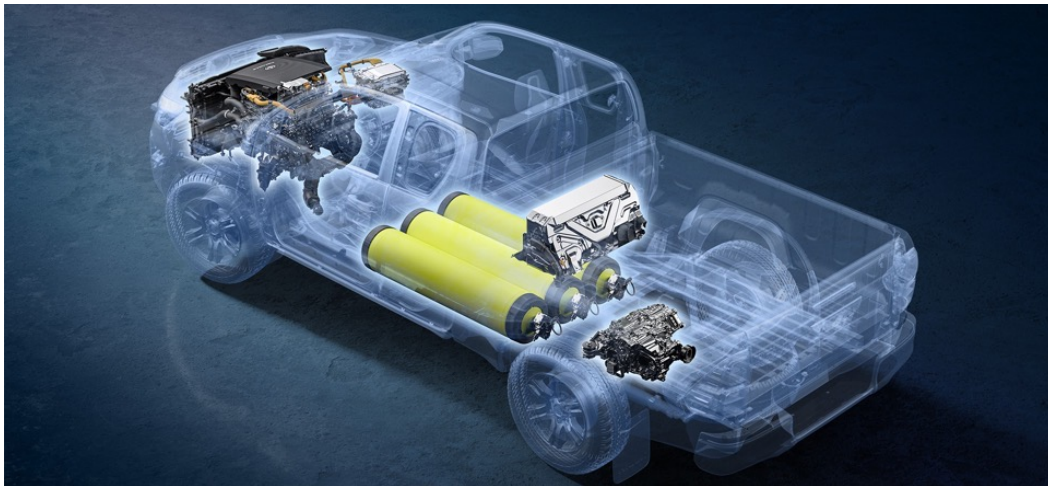
# PROMOTION

HIGH INTEREST FOLLOWING ANNOUNCEMENT



BUILD ON THE INTEREST DURING Q3 & Q4 2023  
WITH STATIC & DYNAMIC VEHICLE REVEALS

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# START THE JOURNEY

GENERATE CLUSTERS AND  
DEMAND FOR HYDROGEN

PROVE PERFORMANCE IN  
HARD TO DECARBONISE  
SECTORS

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**THANK  
YOU!**

**TOYOTA**