

# European Bus Electrification and Global Insights

Interact Analysis

**Alastair Hayfield**

Research Director

[Alastair.hayfield@interactanalysis.com](mailto:Alastair.hayfield@interactanalysis.com)

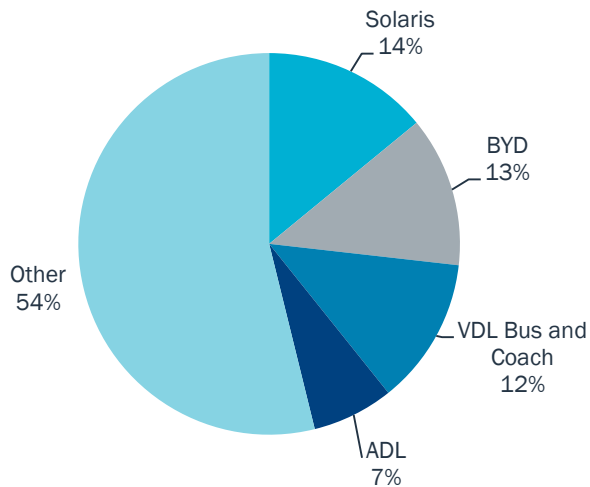
**Rueben Scriven**

Market Research Analyst

[Rueben.scriven@interactanalysis.com](mailto:Rueben.scriven@interactanalysis.com)

# Europe: Market Shares for Battery Electric City Buses

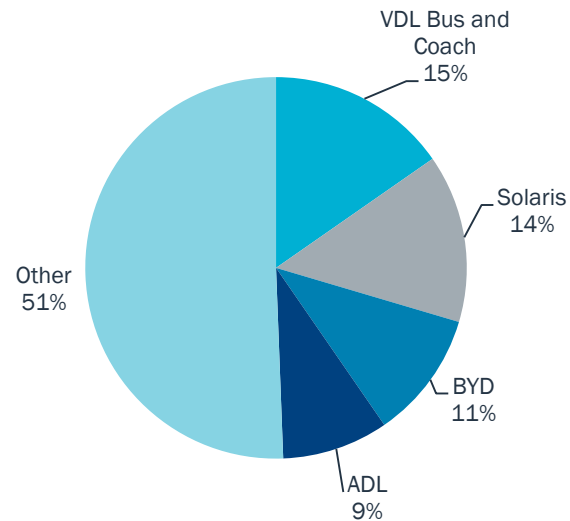
Europe Battery Electric City Bus Market Shares - 2017



Buses above 6t not including trolleybuses  
Source: Interact Analysis

© 2018 Interact Analysis

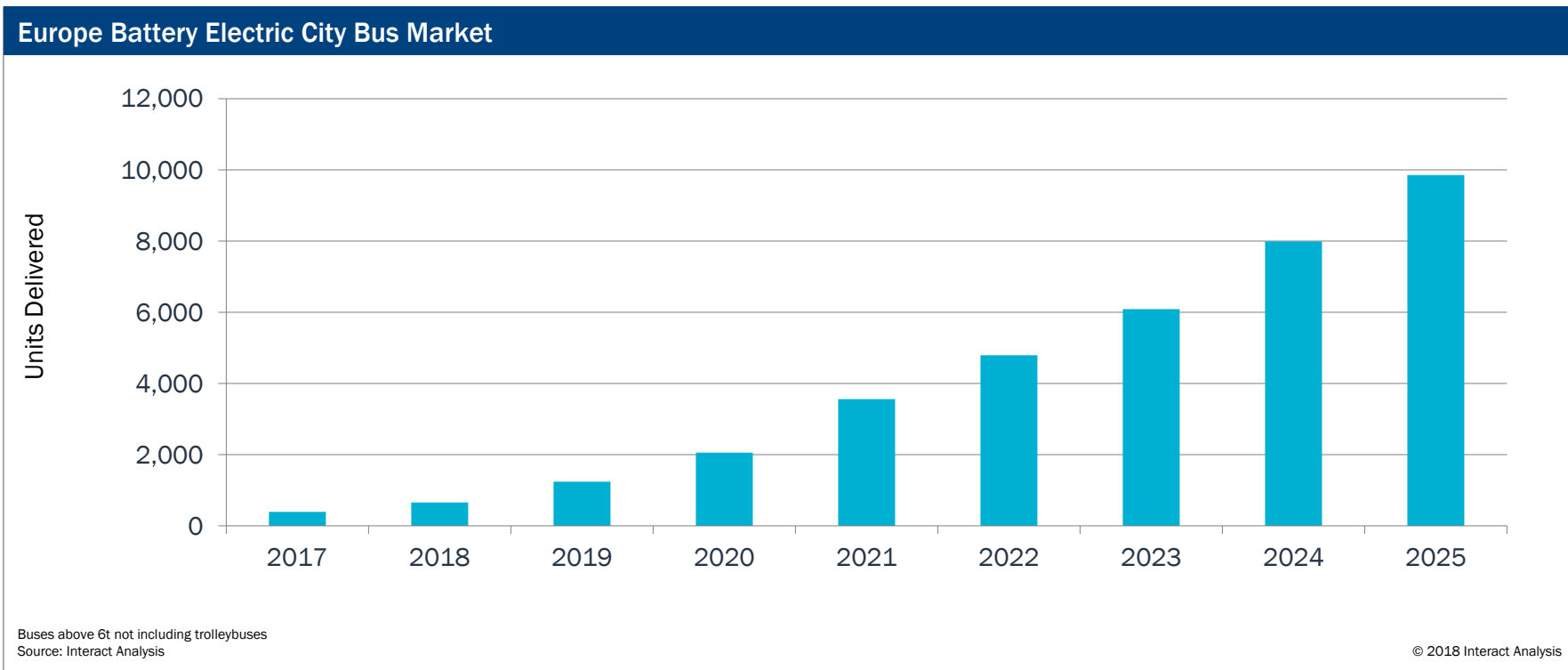
Europe Battery Electric City Bus Market Shares - 2018



Buses above 6t not including trolleybuses  
Source: Interact Analysis

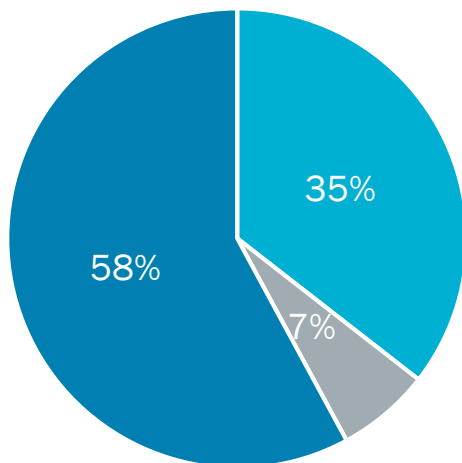
© 2018 Interact Analysis

# Europe: Battery Electric City Bus Market

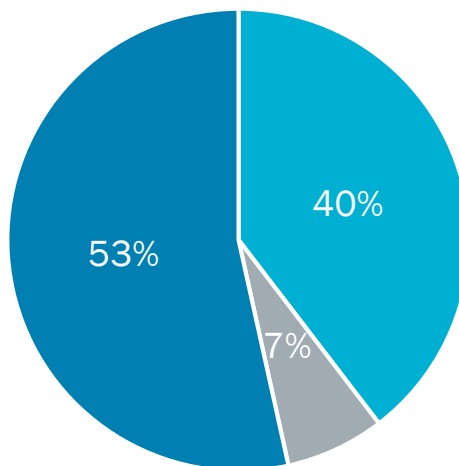


## Charging Infrastructure in EMEA Cities

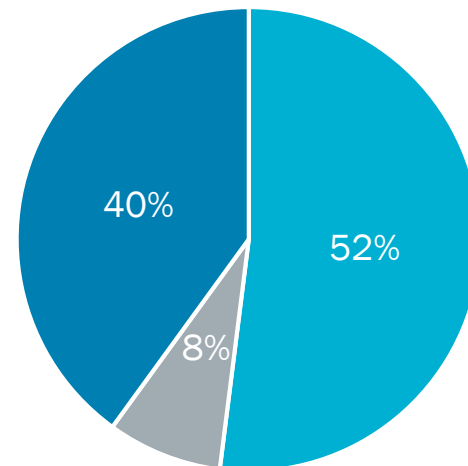
2017 Installed Base



2018 Installed Base

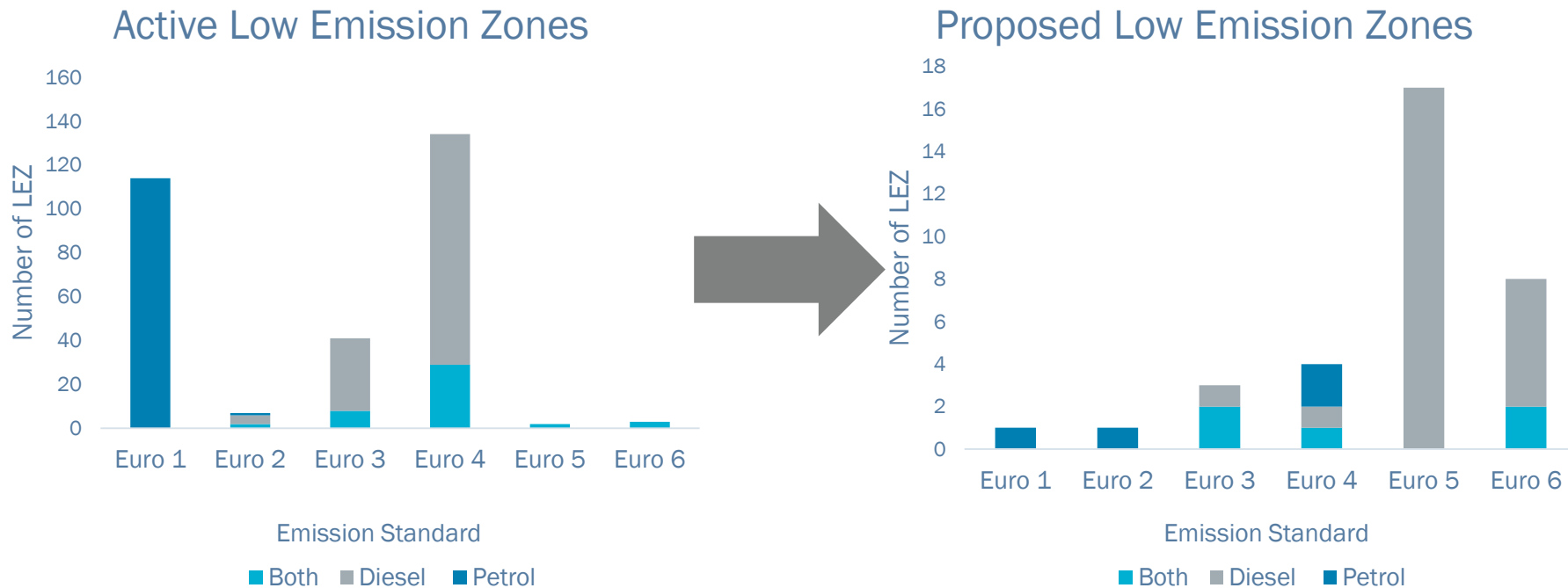


Installed in 2018



■ Depot   
 ■ Opportunity   
 ■ Opportunity and Depot

# Low Emission Zones: Active vs. Proposed

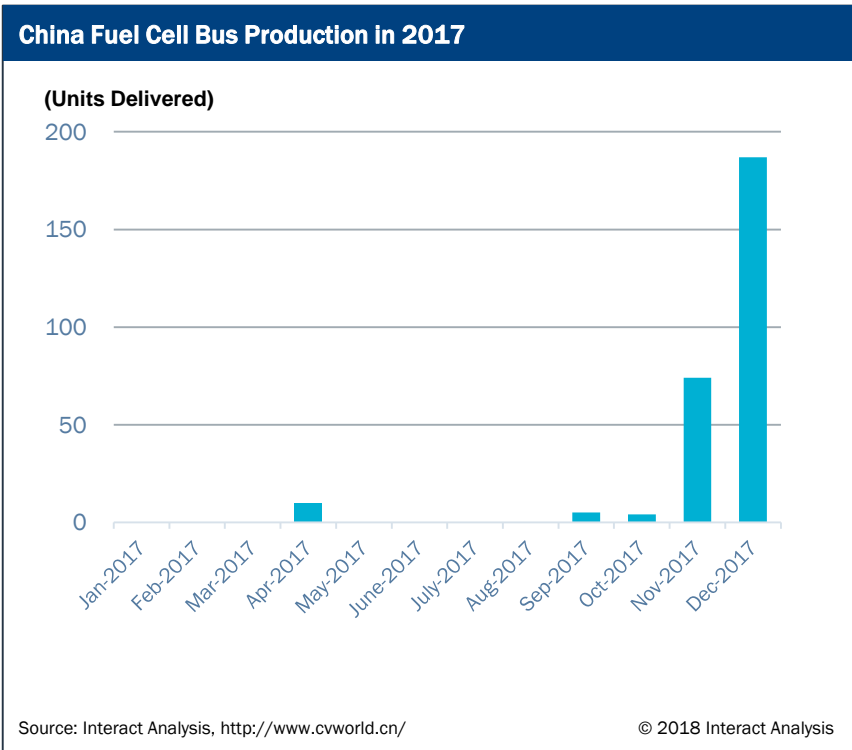


For proposed emission zones, there is a significant increase in the 'minimum' standard versus existing zones. This is a positive, but still means many zones in Europe only ban the oldest vehicles, leaving many cities still relatively heavily polluted.

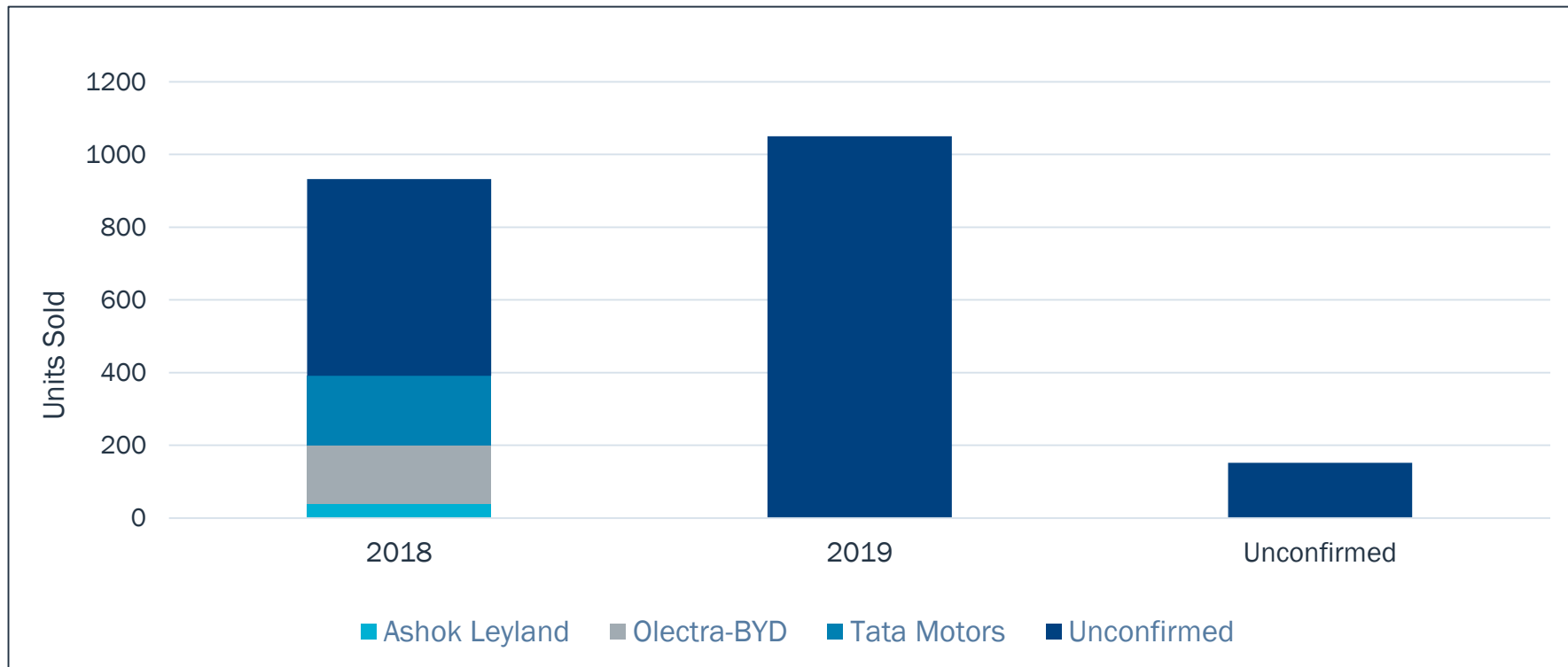
# Chinese New Energy Bus Market

## Recent policy changes

- China have electrified most of their easy routes and the remaining routes are difficult to electrify
- They plan to introduce hydrogen fuel cell buses for these routes
- Unlike the subsidy slope currently facing the electric bus market in China, hydrogen fuel cell buses have not had a reduction in the subsidies they receive
- As a result, we will see a large number of hydrogen fuel cell buses enter service over the next few years in China



# Indian Battery Electric City Bus Market



## Bangalore Case Study:

- **Feb 2014:** BMTC launch e-mobility trial run
- **Oct 2016:** DHI approves subsidies of 150 electric buses
- **Jul 2017:** BMTC decides on an OPEX operating model
- **Feb 2018:** Olectra-BYD wins tender with lowest bid
- **March 2018:** DHI refuses to subsidise the electric buses on an OPEX model
- **May 2018:** DHI agree to subsidise 80 buses on an OPEX model
- **Aug 2018:** DHI prolongs approving contract



## Summary:

1. France and the UK leading the way for electric buses
2. Hybrid buses will plateau while electric buses ramp
3. More stringent emission zones to be introduced primarily focused at diesel
4. China's NEV policies will mean an increase in the number of fuel cell buses
5. Confusion and uncertainty preventing Indian electric bus market from reaching full potential, despite strong growth

# Thank you!

rueben.scriven@interactanalysis.com