

Planning Deployment of Zero-Emission Bus for WATA

Presented to TTAC, September 7, 2022

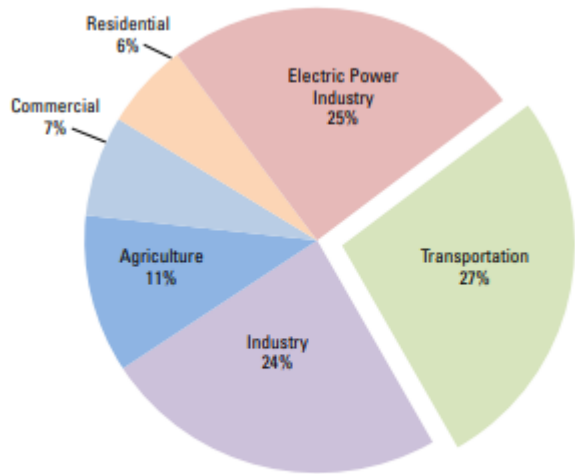
Prepared by Uros Jovanovic



PRESENTATION ORGANIZATION

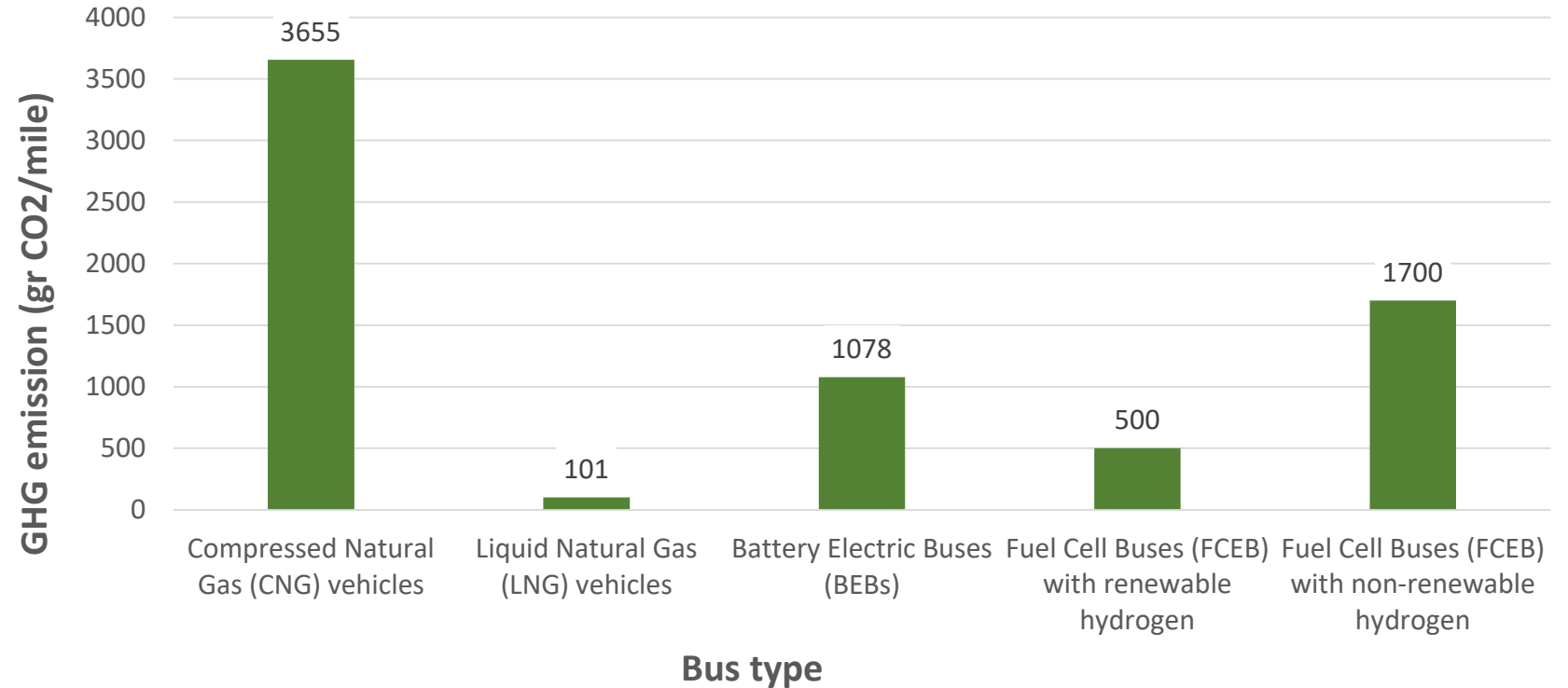
- Introduction and Background
- Review of ZEB deployments in Virginia
- Route Analysis
- Future Considerations for first BEB deployment
- Conclusion
- Next Steps

INTRODUCTION AND BACKGROUND



Share of U.S. GHG Emissions by Economic Sector, 2020^{3,4}

Note: Totals may not add to 100% due to rounding.



**The purpose of this study is to assist WATA in the deployment of Zero Emission Bus
WATA is using CMAQ funds for bus purchase**

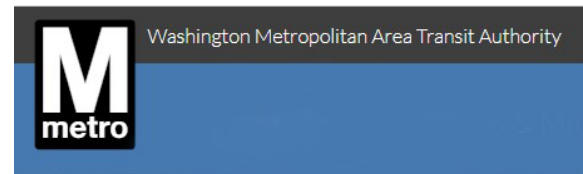
INTRODUCTION AND BACKGROUND

- Capital costs
- Funding opportunities
- Battery Electric Bus (BEB) technology
- Training



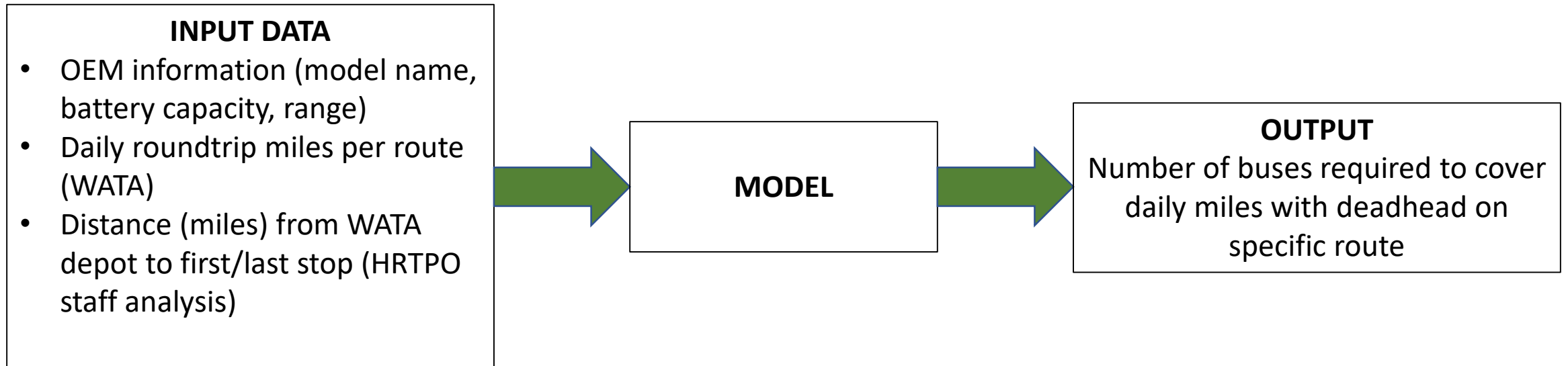
REVIEW OF ZEB DEPLOYMENTS IN VIRGINIA

- Focus on VA transit agencies experience that deployed BEB technology
- Experience example: HRT's experience concerning range



ROUTE ANALYSIS

Factors affecting route



ROUTE ASSIGNMENT

		GILLIG		PROTERRA		NEW FLYER
Route Number	Route Name	Low value (180 miles)	High Value (200 miles)	Low value (172 miles)	High value (240 miles)	220 miles
Rt 1	Lee Hall	1.8	1.7	1.9	1.4	1.5
Rt 2	Richmond Rd	1.3	1.2	1.4	1.0	1.1
Rt 3	Merrimac Trl	1.4	1.2	1.4	1.0	1.1
Rt 4	Longhill Rd	1.8	1.6	1.8	1.3	1.4
Rt 5	Monticello	1.1	1.0	1.1	0.8	0.9
Rt 6	Jamestown	1.7	1.5	1.8	1.3	1.4
Rt 7	Mooretown Rd	1.4	1.3	1.5	1.1	1.2
Rt 8	William & Marry (loop)	0.7	0.7	0.8	0.6	0.6
Rt 9	Toano	2.1	1.9	2.2	1.6	1.7
Rt 11	Lackey	1.4	1.3	1.5	1.1	1.2

FUTURE CONSIDERATIONS FOR FIRST BEB

- Acceptance, deployment
- Data monitoring and evaluation
 - Use Key Performance Indicators (KPIs) for evaluation

CONCLUSION

- WATA's next steps for first BEB purchase:
 - Stakeholder engagement (utility companies, local organizations)
 - Bus procurement
 - Bus acceptance testing, deployment
 - Data collection and evaluation using Key Performance Indicators (KPIs)

CONCLUSION

- WATA's next steps before 2nd+ BEBs purchase:
 - Conduct further research and feasibility study
 - Use KPIs from initial deployment
 - Stakeholder engagement

NEXT STEPS

- The Planning Deployment of Zero Emission Bus for Williamsburg Area Transit Authority (WATA) Report was included in today's agenda and will be open for public review until September 21st.
- The TTAC will be asked to recommend approval of the final document at the October meeting.

Zero-Emission Bus Deployment for WATA

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