

Table 1-1: Project Conceptualisation – Expected major outcomes of the local projects.

Six options provided, one or more options could be selected. Based on 22 responses.

Expected major outcomes of the local FCB Projects	Number of respondents choosing this option	Comments
Refuelling technology highly reliable and maintenance free	14	<ul style="list-style-type: none"> • While the current bus prices and operating costs were a concern (see Chapter 2), most respondents anticipated that an acceptable (low) level of cost will be achieved in the future • While fossil fuel technology is not considered to have a future, less than half the respondents seem to expect a commitment to FCB technology at scale in the short-term. This uncertainty is no doubt common among early stages of adoption of new and disruptive technology
Clear idea of future public transport bus technology	13	
Bus technology highly reliable and maintenance free	12	
Commit to a future FCB technology in short term	8	
FCB technology likely to be too high cost to be sustainable	2	
Likely continuance of purchasing fossil fuel technology into the future	0	

Technology Performance: Quantitative Expectations.

*One site is cautious and expects 75% "in the beginning"; TRL = Technology Readiness Level

	JIVE	JIVE 2
	lowest / median / highest	
1. Availability HRS [%]	98 / 99 / 99.9	90 / 99 / 99.9
2. Availability Buses [%] *	85 / 93 / 98	80 / 90 / 99.9
3. Cost of hydrogen [€/kg]	4 / 6 / 11	4 / 5 / 12
4. Bus operating costs relative to standard fleet	100 / 142 / 300	75 / 150 / 400
5. Maximum wait time for Repairs HRS [hours]	4 / 18 / 24	0 / 6 / 120
6. Maximum wait time for Repairs FCBs [hours]	2 / 24 / 48	2 / 24 / 72
7. Specific fuel consumption [kg/100 km]	8 / 8.8 / 9	8 / 10 / 12
8. Time to fill [minutes]	5 / 10 / 10	5 / 10 / 15
9. Fuel cell stack lifetime [hours]	20,000 / 25,000 / 30,000	7,000 / 22,500 / 50,000
10. TRL of the HRS at the start of demonstration	7 / 8 / 9	7 / 8 / 9
11. TRL of the HRS at the end of demonstration	8 / 9 / 9	8 / 9 / 9
12. TRL of the FCBs at the start of demonstration	7 / 8 / 9	7 / 8 / 9
13. TRL of the FCBs at the end of demonstration	8 / 9 / 9	8 / 9 / 9

Definitions of Technology Readiness Levels.

As used by the FCH JU in their Multi-Annual Work Plan 2014 - 2020.

TRL	Definition
9	Actual system proven in operational environment
8	System complete and qualified
7	System prototype demonstration in operational environment
6	Technology demonstrated in relevant environment
5	Technology validated in relevant environment
4	Technology validated in lab
3	Experimental proof of concept
2	Technology concept formulated
1	Basic principles observed