

## **Report of the Strategic Director Place to the meeting of Executive Committee to be held on 7<sup>th</sup> July 2020**

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**BW**

**Subject:** Advanced Fuel Centre (AFC), Bowling Back Lane, Bradford

### **Summary statement:**

Bradford Council has undertaken analysis of Council fleet emissions as part of the development of the Bradford Clean Air Plan. The assessments looked at opportunities to reduce emissions cost-effectively. The recommendations were that passenger and light goods vehicles (LGV) could transition to electric vehicles, while the heavy goods fleet (HGV) could transition to compressed natural or biomethane gas (CNG/CBG) where suitable vehicle alternatives could be sourced.

To facilitate the transition of the heavy-duty fleet to compressed gas, it is proposed that an Advanced Fuel Centre (AFC), including CNG/CBG refuelling facilities be developed at the Household Waste Recycling Centre on Bowling Back Lane. The site is adjacent to the Local Transmission System (LTS) operated by Northern Gas Networks (NGN). As project partners, NGN is seeking approval from OfGem to award Innovation Funding of £770,000 to cover the costs of accessing the LTS high pressure main. Waste Management has identified that a gas refuelling station can be accommodated at Bowling Back Lane by moving the Household Waste Recycling Facility to the rear of the Council owned site with a new access road from Birkshall Lane.

It is proposed that the AFC will be operational in 2021. The AFC would be available to 3<sup>rd</sup> party vehicle operators, with the potential for significant fuel cost savings and greenhouse gas emission reductions. Grants for local businesses to upgrade vehicles to Clean Air Zone (CAZ) standard, including compressed gas vehicles are proposed to be available until the end of 2021 as part of the Bradford Clean Air Plan delivery.

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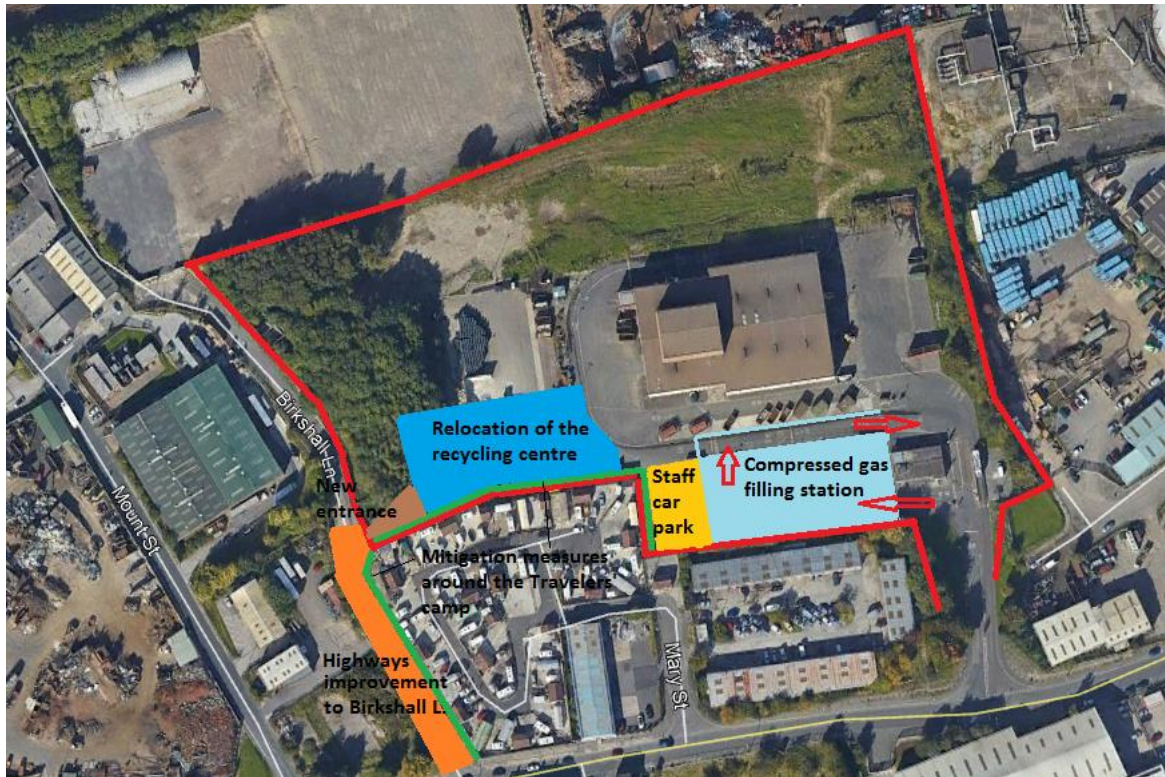
The purpose of the report is to seek approvals to develop the Advanced Fuel Centre AFC)

## **1. SUMMARY**

- 1.1 The purpose of this report is to seek authority to build an Advanced Fuel Centre (AFC) at the Council owned site on Bowling Back Lane to provide a compressed natural/biomethane gas (CNG/CBG) refuelling station to fuel up to 77 heavy duty vehicles that are scheduled to be replaced over a 7-year period from 2021/22. The AFC offers the potential for significant fuel cost savings and reductions in greenhouse gas emissions. The scheme development will involve the re-configuration of the Bowling Back Lane site and Household Waste Recycling Facility. Northern Gas Networks (NGN) are project partners and Yorkshire Water has expressed interest in being an additional anchor fleet. The site will be available to 3<sup>rd</sup> party vehicle operators with potential for revenues through fuel sales.

## **2. BACKGROUND**

- 2.1 The Council is committed to the Climate Emergency agenda and to implementing a Clean Air Plan (CAP), in line with Ministerial Direction, to achieve compliance with legal levels of air quality, in the shortest possible timeframe. As part of the CAP development, a Council fleet assessment was carried out in 2019 that looked at opportunities to reduce emissions cost-effectively. The recommendations of the assessment were that passenger and light goods vehicles (LGV) could transition to electric vehicles, while the heavy goods fleet (HGV), 3.5 tonnes and above could transition to compressed natural or biomethane gas (CNG/CBG) where suitable vehicle alternatives could be sourced. This approach looks at cost and technology readiness over future fleet replacement cycles, including a route to sustainable and zero emission fuels, in line with the West Yorkshire Emissions Reduction Pathway Project.
- 2.2 To facilitate the transition of the heavy-duty fleet to gas, it is proposed that an Advanced Fuel Centre (AFC), including CNG/CBG refuelling facilities be developed at the Household Waste Recycling Centre on Bowling Back Lane. The site is adjacent to the Local Transmission System (LTS) of the gas grid operated by Northern Gas Networks (NGN). As project partners, NGN is seeking approval from OfGem to award the Council £770,000 in Innovation Funding (repayable funding arrangement) to cover the costs of accessing the LTS high pressure main. The anticipated cost of accessing the LTS is approximately £500,000. The proposed siting of the AFC can be seen in image below.
- 2.3 Waste Management has identified that a gas refuelling station can be accommodated at Bowling Back Lane by moving the Household Waste Recycling Facility to the rear of the Council owned site with a new access road from Birkshall Lane. The cost for this work is estimated to be £550,000.



Council owned land is outlined in red (LTS high pressure main can be seen in top right corner)

- 2.4 It is estimated that the CNB/CBG refuelling station will cost between £1.6m to £1.8m to build. The station will be designed to have a lifespan of up to 25 years and will be capable of integrating up to 20% hydrogen into the fuel supply. The Council will explore several delivery models, to identify best value for the Council. It is envisaged that an external organisation will operate and maintain the station on behalf of the Council.
- 2.5 The Council plans to replace 77 heavy goods vehicles that are already included in the agreed fleet replacement programme with compressed gas variants, including refuse collection vehicles (RCV), articulated lorries, tankers and hook-loaders. Tippers may also be included but have not been considered in this assessment. The vehicle types chosen are the heavy-duty fleet and on average they each consume 14,000 litres of diesel per annum. These includes vehicles scheduled for both Bradford and Keighley, with the first 39 programmed to be available to utilise the AFC of which 22 vehicles would be available from site opening. From 2024 the Council may consider refuelling Keighley vehicles with compressed gas transported from the AFC in what is termed a 'mother and daughter' refuelling model. In addition to the Council, Yorkshire Water has expressed an interest in being an additional anchor fleet. NGN has committed 20 large vans and tippers to use the site.
- 2.6 With access to the LTS, the Advanced Fuel Centre (AFC) will not be constrained by volume of gas that can be delivered but by the number of heavy goods vehicles that could access the facility each day. The AFC will require assessments as part of the planning permission process. These assessments will determine potential vehicle capacity for the fuelling facility. It is recognised that many of the fleet service vehicles to be upgraded to gas currently access the Bowling Back Lane site. It is

also understood that gas vehicles have been shown to be quieter than diesel equivalents.

A key consideration will be the avoidance of any adverse impacts on the Mary Street Traveller Site.

- 2.7 A model for wider delivery of compressed biomethane in the district may be considered through the distribution of gas from the AFC by mobile units. AFC success criteria will be monitored and evaluated as part of the Bradford Clean Air Plan Programme, in partnership with Waste & Fleet Services with data helping inform the potential expansion of the AFC, including supply to other parts of the district.
- 2.8 The AFC will be promoted to local and regional businesses as part of the delivery of the Bradford Clean Air Plan. Recent consultation on the proposed Clean Air Plan showed support among businesses for using the AFC, with 14 out of 48 businesses with fleets that responded saying that they were either likely or very likely to use the facility. The Road Haulage Association (RHA), with 7,000 members covering 250,000 vehicles, said that its members would be very likely to use the AFC.

Additionally, any Bradford vehicle operator, including the Council, will be eligible for a proposed grant of £15,000 to upgrade HGVs to Clean Air Zone Standard up to the beginning of 2022, including switching to gas vehicles.

- 2.9 It is customary for 3<sup>rd</sup> party operators to pay a small royalty per kg of gas to reflect the cost and risk borne by the Council in developing the AFC. Market information suggests a royalty of 5p per kg can be expected. In calculating expected royalties, the Council has taken a conservative approach and looked at the potential for an additional 20 HGVs per year accessing the site over the first 5 years of operation and this level being maintained.

Compressed natural gas and biomethane will remain a cost-effective alternative to diesel for hauliers into the next decade – the Treasury has fixed the fuel duty for natural gas/biomethane for vehicle use at 24.7p/kg until 2032.

2.10 The Council has also taken a conservative approach in its assessments and assumed that gas vehicles will cost an incremental £30,000 per vehicle over diesel, based on indicative pricing from suppliers. The table below shows the additional cost of procuring gas vehicles between 2021/22 to 2027/28, and the anticipated fuel cost savings, estimated royalties (at 2p and 5p per kg) and expected greenhouse gas savings over the same period.

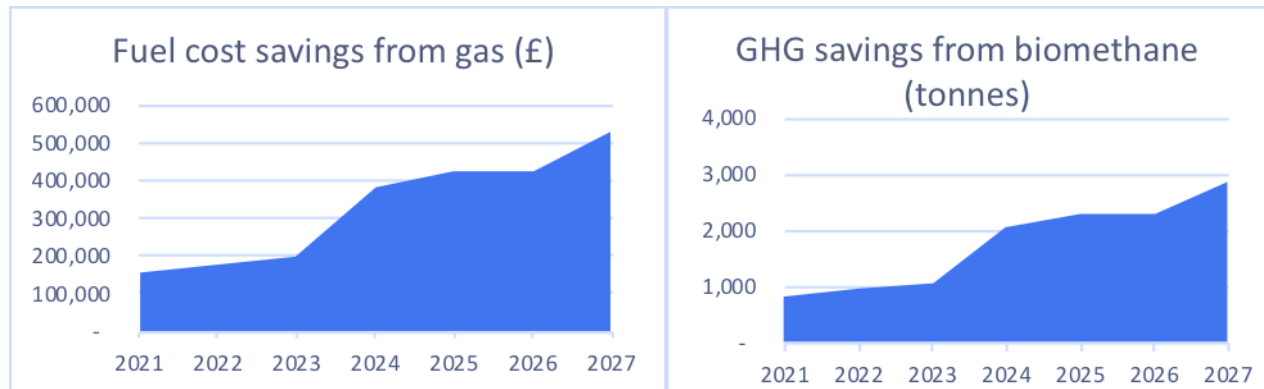
RPL Year	Vehicles per Year	Additional vehicle costs CBG (£30k per vehicle)	Fuel cost savings/year (cumulative)	GHG savings tonnes/year (cumulative)	3 <sup>rd</sup> Party royalties/year @2p/kg	3 <sup>rd</sup> Party royalties/year @5p/kg
2021/22	23	£690,000	£155,472	837	£23,536	£58,840
2022/23	4	£120,000	£178,488	957	£45,987	£114,967
2023/24	2	£60,000	£199,578	1,069	£66,192	£165,480
2024/25	25	£750,000	£379,952	2,046	£87,482	£218,705
2025/26	5	£150,000	£425,963	2,298	£114,424	£286,061
2026/27	0	£0	£425,963	2,298	£114,424	£286,061
2027/28	18	£540,000	£528,292	2,872	£114,424	£286,061
<b>Total</b>	<b>77</b>	<b>£2,310,000</b>	<b>£2,293,709</b>	<b>12,378</b>	<b>£566,469</b>	<b>£1,416,175</b>

Advanced Fuel Centre development costs are provided in the table below. These include the additional costs for gas vehicles

Item	Cost	Funding	Notes
CNG station	£1.6-£1.8m (50% in 2020/21 & 50% in 2021/22)		Estimated costs. High figure to be used. Estimated station life of 25 years
Connection to LTS (gas grid connection)	£500,000 (100% 2021/22)	Up to £770,000	Available as a repayable funding agreement from OfGem Innovation Fund (to be confirmed by end of June)
Improved power supply to site	£250,000 contingency needed (100% 2020/21)		Power supply needed to provide 500kVa
Site preparation	£550,000 100% 2020/21		Re-organisation of site to move Household Waste Recycling Centre and mitigation for Mary St Traveller Site
Workshop adaptation	£50,000 (100% 2020/21)		Workshop modifications to accommodate gas vehicles
Project Management	£72,000	£25,000	Costs for 18 months. Post subsidised as part of the

			Clean Air Plan Programme
Planning Application	£15,000		Major planning application required
Additional costs of 77 gas vehicles	£2,310,000		Cost over 7 year borrowing period
Total	£5,547,000		

- 2.11 The graphs below show the cumulative fuel cost and greenhouse gas savings from switching the Council fleet to CBG over the first 7 years of AFC operation



- 2.12 A Project Manager role to lead on planning, procurement, delivery and promotion of the AFC will be recruited to as part of this project.

The Request for Information (RFI) to ascertain market interest and capability was released on Yortender on the 8<sup>th</sup> June with responses required by 8<sup>th</sup> July.

A major planning application will be required for the scheme which may take 13 weeks from application.

### 3. OTHER CONSIDERATIONS

#### *Reasons for Urgency*

- 3.1 The Council is due to replace 23 heavy duty vehicles in 2021/22. These vehicles use on average 14,000 litres of diesel a year. The lead in period to procure these vehicles is around 9 months from purchase order. Northern Gas Networks inform that approvals from the Health & Safety Executive to access the LTS can take up to 12 months. The project will require planning approval as a major scheme and site preparations will be required to commence by late Autumn/early December.

It is projected that the AFC will be operational by mid/late 2021. If the scheme is not operational by then the Council will need to consider procuring diesel vehicles for the 22 vehicles due to be replaced in 2021/22. 4 HGVs have been identified for replacement in 2022/23 and 2 in 2023/24. It is estimated that the 22 vehicles identified for the scheme in 2021/22 will equate to fuel savings of approximately



£1.5m over a 10-year life-span and GHG reductions of 8,370 tonnes over the same period.

The scheme will require planning permission and is likely to take approximately 11 weeks from application

- 3.2 Bradford Clean Air Plan (CAP) is currently being developed in line with Ministerial Direction with the final business case due for submission to Government by the end of July. The CAP will include the implementation of a Clean Air Zone (CAZ) by late 2021. As part of the CAP delivery, it is proposed that vehicle upgrade grants for lorries and vans will be provided to local vehicle operators until the end of 2021. The grants will provide for the upgrade of vehicles to run on compressed natural gas and biomethane.

#### **4. FINANCIAL & RESOURCE APPRAISAL**

- 4.1 Overall the financial projections are a capital budget of £5.547m, including the cost of 77 gas vehicles at £2.310m. This would be funded from: a £0.770m loan; projected annual fuel savings (due to Council vehicles using gas rather than diesel) which rise to £0.528m in 2027/28; royalties from third parties projected between £0.566m and £1.42m by 2027/28; and £0.025m of other funding.
- 4.2 In very broad terms, and assuming for the moment that both the Fuel Centre and vehicles have an asset life of 10 years, the Council will effectively pay a per vehicle supplement for the scheme (excluding interest) of £7,200, against yearly fuel savings of £6,760. There will of course be interest costs but also as set out above, scope for additional royalties (and the Fuel Centre will in practice have a longer asset life, reducing the vehicle supplement).
- 4.3 However, the financial proposals will be subject to detailed sensitivity analysis around for example vehicle and fuel costs, which are subject to change. It is noted though that the current analysis of fuel savings is based on a very detailed analysis based in the summer of 2019. As part of the further work, there will also be further consideration of additional costs such as Business Rates, insurance and staffing amongst other items. Other issues that will impact on the overall financial model will be the involvement of third party operators in running the scheme and the scope of the compressed gas refuelling contract together with related energy costs.
- 4.4 Other consideration will be required around the scope of alternative operators entering the market. There may also be small adjustments in the allocation of costs between capital and revenue budgets. The cost analysis is further subject to statutory risks around fuel pricing and Government environmental policy.
- 4.4 In conclusion, therefore, the recommendation that the scheme is added to the Council's Capital Programme scheme is supported. This recommendation is for inclusion with the Council's reserve category of capital projects, given the current broad financial outline. It also proposed that the scheme is subject to detailed and robust financial modelling, analysis and challenge within appropriate officer forums and the scheme progresses only in tandem with this.

## **5. RISK MANAGEMENT AND GOVERNANCE ISSUES**

The main risks to this project is slippage in the development programme for the Advanced Fuel Centre because of the tight timescales to maximise the benefit of having the Advanced Fuel Centre operational with the timing requirement for the replacement heavy duty fleet vehicles.

To mitigate risks a project manager is to be appointed to lead on planning, procurement, delivery and promotion of the Advanced Fuel Centre. In addition, it is proposed that the Council apply for planning permission and undertake the procurement of works required for the project as soon as possible.

## **6. LEGAL APPRAISAL**

The proposal for the relocation of Household Waste Recycling Centre and the development of the Advanced Fuel Centre will require planning permission.

If the funding of £770,000 from Ofgem is offered and accepted by the Council, the Council will be required to enter into a repayable funding agreement subject to the Council agreeing to the terms of the agreement.

The procurement will be carried out in accordance with Council Contract Standing Orders and the Council will be entering into contract with the successful tenderer.

## **7. OTHER IMPLICATIONS**

### **7.1 EQUALITY & DIVERSITY**

No implications envisaged. The project is on an existing Council site and is essentially a change of vehicle fuelling station from diesel to gas and the subsequent process changes involved.

### **7.2 SUSTAINABILITY IMPLICATIONS**

Sustainability is at the centre of the project

### **7.3 GREENHOUSE GAS EMISSIONS IMPACTS**

The project will achieve greenhouse gas reductions of 85% for the vehicles using the Advanced Fuel Centre, including Council fleet and 3<sup>rd</sup> party operators. For the Council vehicles alone, the cumulative GHG savings will be over 12,000 tonnes in the first 7 years of AFC operation

### **7.4 COMMUNITY SAFETY IMPLICATIONS**

No implications envisaged

### **7.5 HUMAN RIGHTS ACT**

Not applicable



## **7.6 TRADE UNION**

Not applicable

## **7.7 WARD IMPLICATIONS**

No implications envisaged. Ward Members for Bowling and Barkerend have been briefed on the project.

## **7.8 AREA COMMITTEE ACTION PLAN IMPLICATIONS (for reports to Area Committees only)**

No implications envisaged

## **7.9 IMPLICATIONS FOR CORPORATE PARENTING**

Improvements to air quality will improve the environment for children and young people and will have a positive effect on outcomes for health and wellbeing across the District.

## **7.10 ISSUES ARISING FROM PRIVACY IMPACT ASSESMENT**

None

## **8. NOT FOR PUBLICATION DOCUMENTS**

None

## **9. OPTIONS**

1. Accept this proposal for an AFC and CNG vehicles. Advantages: - this will achieve emission reduction, fuel cost reduction and commercial income. Disadvantages: – not all vehicle manufacturers supply gas vehicles, redevelopment of site required, maintenance training and infrastructure required.

2. Reject proposal and carry on as we are. Advantages: – Will still be compliant with emission standards, no change to fuelling/maintenance procedures. Disadvantages: - higher emissions, no potential for commercial income, no readiness for future hydrogen refuelling.

## **10. RECOMMENDATIONS**

- (1) That adjustment is made to the Capital Programme budget for the funding as detailed in the Finance and Resource Appraisal section of this report.
- (2) That approval be given to relocate the Household Waste Recycling Facility to the rear of the Council owned site with a new access road from Birkshall Lane.

- (3) That approval be given to prepare and submit a planning application for the relocation of the Household Waste Recycling Facility at BBL and for the development the Advanced Fuel Centre.
- (4) That approval be given to undertake the procurement exercise for the works required for the relocation of the Household Waste Recycling Facility and for the development of the Advanced Fuel Centre, including facility operations, and authority be given to the Strategic Director of Place in consultation with the Director for Finance and the City Solicitor to award the contract to the successful tenderer.
- (5) That authority be given to the Strategic Director of Place in consultation with the Director of Finance & IT and the City Solicitor to accept and enter into a repayable funding agreement with Northern Gas Networks / OfGem regarding the award of Innovation Funding of up to £770,000 to access the Local Transmission System (LTS, high pressure gas network), subject to agreeing terms of the funding and repayment
- (6) That approval be given to enter into dialogue with 3<sup>rd</sup> party vehicle operators regarding use of the Advanced Fuel Centre

## **11. APPENDICES**

None

## **12. BACKGROUND DOCUMENTS**

Bradford Clean Air Plan: Bradford Council Fleet Assessment (2019)