National Centre for Social Research

Volumetric Concrete Mixers: Analysis of Call for Evidence Responses

Prepared for: Department for Transport

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Contents

Glossary

Word/Phrase	Meaning
Annual Vehicle Testing	Yearly testing that heavy goods vehicles must go through to assess vehicle safety, roadworthiness, and exhaust emissions, similar to an MOT
Engineering plant	A movable plant or equipment being a motor vehicle or trailer specifically designed and constructed for the special purpose of engineering operations.
Indivisible Loads	Any load that cannot be divided without great difficulty or risk of damage
Manufacturer Design Weights	The weight at which a vehicle has been designed to safely operate at. This does not denote the safe operating weight when the vehicle is carrying goods.
Operator License	Vehicle owners and drivers require an operator's license to operate a vehicle which weighs over 3.5 tonnes.
Payload	The part of a vehicle's load from which revenue is derived.
Road Wear	Damage caused to roads from continuous use and weathering.
Vehicle Plating	Driver and Vehicle Standards agency issuing the vehicle a plate (sometimes referred to as "ministry plates") that denotes the maximum vehicle weight it is allowed to operate at. This is not to be confused with the design weight.
Vehicle Special Order	A VSO is a legal instrument that authorises the road use of a small number of vehicle that are special by type or purpose. The VSO specifies which of the normal regulatory requirements do not apply and any additional terms and conditions of the use of the vehicle.

Volumetric Concrete Mixer (VCM)	A mobile concrete batching plant that mixes the raw materials on site. They have separate compartments for holding sand, stone, cement, and water.
Stopping distance	The time it takes to bring a moving vehicle to a complete stop.

Executive Summary

This report summarises the responses to the Department for Transport (DfT)'s Volumetric Concrete Mixers (VCM) Call for Evidence that ran between 19th October and 15th December 2023. A total of 36 responses were received, providing evidence on 3 policy options presented by DfT for the future approach to weight limits for VCMs. Respondents included individual motorists, trade bodies, and VCM operators, manufacturers and sellers. The evidence submitted ranges between case study examples, industry estimates, and personal opinion. This report does not assess the quality of the evidence submitted but presents the themes and recommendations that emerged from the responses, a summary of which are provided below.

Reasons to support or oppose VCMs at higher weight limits

VCMs (sometimes known as Mobile Concrete Batching Plants (MCBP)) are currently subject to a temporary weight limit arrangement. This allows specified VCMs (subject to Vehicle Special Orders (VSOs)) to operate above the standard weight limit of 32 tonnes (t) for most categories of Heavy Goods Vehicle (HGV). This temporary arrangement is currently scheduled to end in 2028 (or on the 12th anniversary of a vehicle's registration), leading DfT to seek evidence on whether to amend or maintain the current approach. Respondent reasoning for supporting or opposing the operation of VCMs at higher weights covered the factors presented below.

Competitiveness of the VCM industry

Respondents explained that requiring VCMs to operate at 32t would negatively impact the competitiveness of the VCM industry in a number of ways. VCMs would incur a substantial reduction in capacity, estimated by respondents to be -2.8m^3 of concrete per delivery for typical 4 axles VCMs. This reduction in carrying capacity would it was claimed necessitate more VCMs on the road and increased mileage to maintain current service levels, meaning increased costs to the operator in fuel, wages and vehicle maintenance.

This reduction in capacity would also limit their ability to carry out specialised services, which are better suited to VCMs than traditional barrel mixers. Examples included, delivering small batches of different strength concrete to multiple domestic and, or small business customers in one trip, and rural or emergency repair projects, which would drive up prices for these markets.

Fairness in the concrete sector

In contrast, those opposed to the operation of higher weight VCMs argued that the current weight arrangements provide VCMs with a substantial competitive advantage over traditional barrel mixers, which are required to work within the constraints of the standard weight limits. These respondents stated that VCMs and barrel mixers serve different purposes within the concrete industry, regardless of permitted operating weights. As such, there would always be use cases that favour one or the other method of delivery, even after removal of the exemption, therefore ensuring the future of both.

Ensuring road safety and compliance

Respondents who supported higher weight VCMs suggested there were no safety concerns around their operation. They suggested manufacturer design weights already safeguard the driver, other road users, and the public. Additional safety checks introduced at the same time as the VSOs had it was claimed raised safety standards further. These respondents suggested that compliance with safety standards could be further assured through the use of spot checks, particularly of driver satellite navigation records. However, those opposed to higher weight VCMs felt issues of safety remained, including around increased stopping distances for vehicles at heavier loads.

Environmental benefits and impacts on roads

Again, respondents had contrasting views on the environmental and infrastructure impacts of higher weight VCMs. Supporters of higher weight VCMs cited increases in CO_2 emissions brought about by increases in annual VCM trips due to reduced carrying capacity. However, the opposing group explained transport is a small part of the concrete industry's carbon footprint. As such, the carbon savings produced by maintaining the weight limit exemption would be marginal.

Those who supported higher weight limits also disagreed with the DfT's estimates around increased road wear from these VCMs. They suggested these estimates were incorrectly based on a VCM being loaded to its maximum weight limit for its entire journey. However, the opposing group agreed with the estimates and stated that increased road and infrastructure wear were legitimate concerns. This area is the subject of a separate report commissioned by National Highways.

Views in support or opposition to the policy options

Respondent views on the factors set out above influenced their support or opposition to the 3 policy options presented by the DfT.

Option 1: Maintain the current exceptional temporary arrangement for VCMs

Under this option, the current temporary arrangement would not change. Those in favour of higher weight VCMs opposed option one because it would require all VCMs to comply with the standard 32t weight from 2028. Those against the use of higher weight VCMs supported the option, although some preferred VCMs to be brought within standard weight limits sooner.

Option 2: Allow all VCMs to operate at weights of the temporary VSOs if there are advanced route notifications

All respondents to the Call for Evidence opposed option 2 but for different reasons. Those who supported the operation of higher weight VCMs felt this policy would overly limit VCM operations, of which around 80% require same day or emergency deliveries. They also questioned whether adequate resourcing existed in the relevant authorities to process advanced notifications for the remaining 20% of VCM activity. Those who were against the use of higher weight VCMs opposed the use of advanced notifications to allow their continued operation. The advanced notification process had been designed for use with indivisible loads, that is, those that could not practically be broken down further. As concrete is inherently divisible, they argued there was no logical basis for the use of this exception for VCMs.

Options 3: Allow for further VSOs until further notice, subject to vehicle age and the operator being accredited by the DVSA for Earned Recognition

Respondents were divided in their views of option 3. Among those in favour of higher weight VCMs, two different views existed. Some felt the requirement for accreditation under the Earned Recognition (ER) scheme could improve standards in the industry. However, they welcomed more clarity on how the policy would operate in practice. Others felt option 3 added unnecessary bureaucracy. They were therefore in favour of an alternative fourth option, which would involve the indefinite extension of the higher weight limits for specified VCMs without additional conditions. Those against the use of higher weight VCMs felt option 3 represented a misapplication of the ER scheme, and did not offer sufficient safety and compliance safeguards to justify continued VCM operation above standard weights.

Introduction

This document summarises the themes raised by respondents to the Department for Transport's (DfT) Volumetric Concrete Mixers Call for Evidence. In order to provide context for the discussion that follows, this section first provides background to the Call for Evidence, outlines the policy options presented to respondents, summarises the type of responses received and describes our approach to analysis of the responses.

Background

Volumetric Concrete Mixers (VCMs), sometimes known as Mobile Concrete Batching Plants (MCBP), are currently subject to a temporary arrangement which allows specified VCMs to operate above the standard weight limits for other categories of Heavy Goods Vehicle (HGV). This temporary arrangement is currently scheduled to end in 2028 (or on the 12th anniversary of a vehicle's registration).

Prior to 2018, VCMs had operated up to the chassis design weight, rather than the lower standard permitted weights set by the Road Vehicles (Authorised Weight) Regulations 1998. This was because the industry considered VCMs to fall under the 'engineering plant' exemption, which exempted them from operator licensing and annual vehicle testing. In 2017 and 2018 respectively, these exemptions were removed. One implication of this was that VCMs became subject to vehicle 'plating'. This involves vehicles being fitted with a plate that shows the maximum permitted on-road laden weight of the vehicle.

This change led to government re-considering the maximum weights at which VCMs could legally operate. Following this, and in light of feedback received, DfT introduced the current weight limit arrangement. It was intended as a transitional measure to allow the industry to adapt, recognising the significant investment previously made by the sector in VCMs which operate above the standard permitted weight limits.

The temporary arrangement

Under the temporary arrangement, VCMs subject to Vehicle Special Orders (VSOs) are allowed to operate at above the standard weight limit of 32 tonnes (t) for most categories of HGV.

In place of the usual gross vehicle weights specified in Schedule 1 (parts I and II) of the Road Vehicles (Authorised Weight) Regulations 1998, VSOs applied the following gross weight limits to the relevant VCM design configurations:

- 4-axle rigid: 38.4t. This is slightly below the maximum design weight of these vehicles (41.48t)
- 5-axle rigid (or more than 5-axle rigid): 44t

The gross weight must also not exceed 6t per metre of the front-rear axle distance. All other requirements, including design weights continued to apply.

Upon request, the Vehicle Certification Agency (VCA) issued VSOs on a per operator basis to cover the relevant vehicles in that operator's fleet. All applications to add newly registered vehicles to an operator's VSO had to be made by the end of 2018. After this point, newly registered vehicles were not eligible to operate under a VSO and were therefore subject to the standard weight limits. Vehicles to which a VSO applies are exempt from vehicle plating (as the non-standard weight limits are specified on the VSO).

The Call for Evidence

Ministers have committed to reviewing whether the current approach to weight limits for VCMs remains appropriate. As the temporary arrangement expires in 2028 and vehicles often have an operational life in excess of 10 years, the DfT requires a clear view of the impact of extending, removing or changing the current approach. Against this backdrop, the DfT launched a Call for Evidence to assess whether there is evidence to justify amending the current policy on weight limits for VCMs.

The Call for Evidence ran from 19th October to the 15th December 2023. The Call for Evidence document, which set out the context for the issues covered in the Call, presented 3 potential policy options moving forward in relation to weight limits for VCMs. These are set out in detail in the following paragraphs. The DfT invited responses in the form of a questionnaire consisting of around eighty questions. The full list of consultation questions is available in Appendix A. This included a mix of open and closed questions. Respondents could reply either through an online survey or by email to DfT. The questions were designed to elicit respondent views on various aspects of the 3 policy options presented, as well as providing insight on the current activities of VCMs both subject and not subject to VSOs. As well as answering the questions, respondents were invited to submit documents containing evidence relating to the themes covered.

The questions the Call for Evidence sought to answer were:

- What would the impact be (on industry, on road safety) of maintaining the current exceptional temporary arrangement for VCMs?
- What would the impact be (on industry, on road safety) of allowing all VCMs to operate at the weights of the temporary VSOs if there are advanced route notifications?
- What would the impact be (on industry, on road safety) of allowing for further vehicle special orders (VSO) until further notice, subject to vehicle age and the operator being accredited by DVSA for earned recognition?
- What are environmental benefits from higher weight VCMs and how do these compare with the impacts on bridges and road surfaces from allowing the VSOs to continue until further notice?

The policy options

The Call for Evidence set out 3 possible policy options for VCM weight limits moving forward. These are set out below.

Option 1: maintain the current exceptional temporary arrangement for VCMs

This policy option represents no change. This means VCMs subject to VSOs can operate at higher weights than standard weight limits until 2028 or the 12th anniversary of the vehicle's first registration (whichever comes first).

As described in the Call for Evidence document, this option provides operators with time to adapt their business to meet the standard lower weight limits for VCMs before the requirement to bring them in line with standard goods vehicle weights. Following public consultation, it was previously decided that VCMs should comply with the standard 32t weight limit. This decision was based on stakeholder concerns around ensuring fair competition with other goods vehicles, increased road safety risks associated with higher weight vehicles, and increased infrastructure costs from bridge damage and road wear. Respondent views on these aspects are addressed in chapters 1 and 3 of the report.

Option 2: allow all VCMs to operate at the weights of the temporary VSOs if there are advanced route notifications

The main requirement under this option would be for operators to give 2 working days' notice ahead of any relevant movement, with indemnity to road and bridge authorities. A similar type of process is already used for abnormal indivisible load vehicles, that is, those that cannot practically comply because the load they carry cannot be broken down any further, for example, wind turbine blades.

At present, the VSOs permit VCMs at the higher weights to use the whole public road network, except where weak structures have been identified and weights limits put in place for them. VCMs operating under the VSOs are not required to notify bridge owners in advance of their operations. The proposed advance notice requirement would only involve the parts of journeys where a VCM would be laden higher than the standard weight limits (32t).

This option would require a transitional period to move from the existing arrangement. Following this period, VCM operators would be permitted to operate permanently at higher weights subject to providing advance warning of their intended movements to the relevant authorities.

VCM operators would be responsible for notifying the police, relevant highway authorities and bridge and structure owners such as National Highways and Network Rail. Notification would be given using National Highways electronic service delivery for abnormal loads (ESDAL) system or similar to:

- plot their route for each journey
- give advance notice of any possible route problems
- save vehicle details and routes for future use

VCMs operating under notifications in this option would also be required to comply with particular speed limits for different category of road.

Allowing the transport of concrete by higher weight vehicles when standard weight vehicles could be used is described in the Call for Evidence document as a 'significant legal adaptation.'

Option 3: Allow for further vehicle special orders (VSO) until further notice, subject to vehicle age and the operator being accredited by DVSA for earned recognition

This option would involve providing further VSOs for post-2018 vehicles (which would be valid for 12 years post-registration) if the operator is in the Earned Recognition (ER) scheme. In line with the current temporary arrangement, the mechanism for allowing the higher standard weights would be through the issuance of VSOs on a per-operator basis. The weights allowed would be the same as for the 2018 VSOs.

This approach would continue to control the number of VCMs operating above the standard weight limits. It would also continue to allow the specified VCMs to operate across the road network, except where there were local weight restrictions. The Call for Evidence document explains there could be some excess damage to weak bridges as a result, particularly in areas where there were repeated operations of VCMs.

Option 3 would extend what was designed to be a temporary weight limit exemption to become an enduring approach. Given this, accreditation of VSO-holders under the DVSA's earned recognition scheme would be required as assurance of very high compliance and safety standards. VCM operators would be required to regularly share performance information with DVSA and, in return, their vehicles would be less likely to be stopped for inspections. In instances of loss of accreditation, it is envisaged the VSO would be revoked if the operator had not regained the earned recognition status within 6 months, or more quickly if significant safety concerns had been identified.

Under option 3, the existing VSOs made in 2018 could be terminated earlier than their planned duration (which could be up to 2028) in favour of this new approach and with an expected notice period of at least 6 months.

Further potential options

While DfT presented 3 possible policy options for future approaches to the weight limits for VCMs, the DfT invited respondents to the Call for Evidence to put forward additional options for their considerations. However, any changes made to the current regime, will need to maintain assurances for the safe operation of vehicles on the road and will need to comply with the conclusions of a National Highways structures study (undertaken in autumn 2023).

Summary of responses

A total of 36 submissions to the Call for Evidence were received by the DfT. There were 15 online survey submissions, and 21 submissions by email. Submissions were received from a number of respondent categories as set out in

Table 1. The survey was not representative and those organisations who participated were not a census of the concrete industry. This prevents the report from drawing definitive conclusions on if and where consensus lay.

Respondents did not provide supporting documents in response to the consultation and, in general, did not cite sources, such as research reports, for figures included. In some instances, estimates were drawn from individual case study examples. A small number of responses were not structured around the Call for Evidence questions, but have been included in thematic analysis. There was also a high number of identical, rather than unique, responses given to individual open response questions. Views on the future approach to VCM weight limits were highly polarised, with responses offering contrasting views for most themes.

Table 1. Breakdown of responses

Respondent category	Number
Individual motorist	3
VCM operator, seller, or manufacturer	29
Trade body	4

VCM operator respondents reported fleet sizes of between 2 to 25 VCMs (operating in Great Britain). Within these fleets, between 2 to 10 VCMs where subject to VSOs and therefore able to operate above standard weight limits.

Approach to analysis

Firstly, the online and email responses were combined to produce one dataset for analysis. Given the small sample size, it was not possible to quantitatively analyse and report on the data. Therefore, thematic analysis was undertaken of all responses (closed and open) using NatCen's framework approach. This approach facilitates data management and analysis by organising data by case and theme within an overall matrix. In this study, cases were respondents to the Call for Evidence and themes were based on the study aims and research questions. The responses are therefore presented by theme rather than by question in this report.

Given the small sample size and unrepresentative nature of the respondents, we do not indicate the scale of views held to avoid readers drawing inappropriate conclusions about the strength of opinion on a particular theme or policy approach. Given the small sample size and sample composition, it was also not possible to compare the views of different respondent categories. Instead, this document simply summarises the range of views raised by respondents by theme. It also does not assess the quality of evidence submitted. This report in itself is not a formal government response. Therefore, it does not offer a comprehensive list of possible actions that may be considered or taken forward by the DfT.

Structure of the report

The rest of the report is structured as follows:

- chapter 1 Views on higher weight VCMs: This chapter addresses a number of themes which cut across all 3 policy options presented. These related to reasons given for supporting or opposing the operation of higher weight VCMs in general
- chapter 2 Views on policy options: This chapter explores the implications of the themes raised in the preceding chapter for the 3 policy options and whether respondents opposed or supported each. Considerations raised that were specific to each option are also discussed
- chapter 3 Environmental and road wear implications: This chapter explores respondent views on the environmental benefits of higher weight VCMs and the impact of the vehicles on bridges and road surfaces

1. Views on higher weight VCMs

This chapter addresses a number of themes which cut across all 3 policy options presented. These related to reasons given for supporting or opposing the operation of higher weight VCMs. Factors presented include: the impact on services provided by VCMs, efficiency, the future of the industry, competition, and safety and compliance.

1.1 Impact on services

Responses discussed the implications of lower VCM weight limits on the services that could be offered to customers.

Respondents who were supportive of higher weight VCMs highlighted a number of activities or project types to which VCMs are better suited than barrel mixers. These included:

- where small loads of concrete (for example, for small-scale foundations for houses) or different strengths of concrete from the same load are required
- rural projects in remote areas to which barrel mixers are restricted by the '2-hour max rule' after which the concrete they are carrying becomes unusable
- road works at night (for example, installing or replacing signage, barriers) where delays often occur. Again, traditional barrel mixers are restricted by the '2-hour max rule'

According to these respondents, the ability of VCMs to provide these services would be limited by the ending of the weight limit exemptions.

One of the main benefits of VCMs described was their ability to carry out a 'milk round', that is, delivering small amounts of concrete at different strengths to a number of customers in one trip from the depot. Requiring VCMs to meet a 32t weight limit would reduce their ability to service certain markets in this way (such as domestic markets and Small and Medium Enterprise (SME) builders).

1.2 Efficiency

Responses also assessed the implications for efficiency of requiring VCMs to operate at lower weight limits. The following factors were considered: reduction in payload per journey, increased waste, and increased vehicle mileage.

The Call for Evidence document noted that when operating at the standard maximum weight for 4 axle goods vehicles, VCMs incur a substantial payload reduction compared to a barrel

concrete mixer. Respondents in favour of higher weight VCMs provided estimates (Table 2) for the reduction in payload per journey of requiring VCMs to operate at 32t.

Table 2. Payload reduction based on average weight of 1m^3 of concrete (2.3t)

VCM configuration	Weight reduction at 32t	Payload reduction per journey at 32t
38.4t on 4 axles	6.4t	2.8m^3
44t on 5 axles	12t	5.2m^3

The reductions in payload would it was claimed lead to more frequent returns to the depot, increased mileage, and driver hours. Estimates provided included the following:

- one extra trip to and from the depot for each VCM daily, that is on average, an extra 24 miles per day
- 14 million more HGV miles per annum on UK roads
- 598,000 more HGV journeys each year
- 200 or 20% more HGVs on roads to make up for carrying smaller loads

These figures cannot be validated due to the small sample size and that the data is held by commercial organisations. Respondents in favour of higher weight VCMs, also suggested that requiring them to operate at 32t would lead to more concrete wastage by creating greater reliance on traditional barrel mixers. They explained that VCMs carry the unmixed raw materials to produce the exact volume of concrete needed on site. Barrel mixers, however, deliver pre-mixed concrete, with any additional mix drying out or being unused:

> *"There is no waste from [a VCM], whereas if a drum has anything left it is poured on the ground."*

However, respondents who were opposed to higher weight VCMs questioned whether allowing heavier loads in order to reduce trips and mileage was a compelling rationale for permitting a weight limit exemption specifically for VCMs. As it could be argued all vehicles would be made more efficient if allowed to carry heavier loads. They argued VCMs were not unique in this respect and barrel mixers should also be allowed to operate above the standard weight limits if an extension for VCMs was considered.

1.3 Future of the industry

Respondents also discussed themes related to the future of the VCM industry, estimated as between 501 to 1,000 VCMs currently operating across Great Britain. Respondents who were opposed to a 32t weight limit for VCMs suggested that the future of the industry could be impacted negatively in a range of ways if exemptions were not extended beyond 2028. They stated that there was no published Economic Impact Assessment prior to the reduction in weights for VCMs not subject to VSOs in 2018. However, it should be noted that the legislation that brough VCMs into testing and standard weight limits (The Goods Vehicles (Plating and Testing) (Miscellaneous Amendments) Regulations 2017) did include an Economic Impact Assessment. Potential negative implications of a lower weight limit included:

- reduced flexibility and capacity. Loss of carrying capacity would negatively impact the ability of VCM operators to meet the needs of the market and the demands of customers. Annual loss of turnover was estimated at around £100,000 per VCM at 32t. This would be particularly detrimental for smaller operators that lack the scale to absorb losses:

  > *"If we must run trucks at 32t and therefore further have reductions in capacity, our business will no longer be viable."*

- increased costs. Reduction in payload set out above and the resulting increased number of journeys would lead to increased annual costs to the operator in fuel (an estimated £17,000), vehicle maintenance due to increased wear and tear (an estimated +18%), extra vehicles (each costing £240,000), and driver hours. This would in turn lead to increased costs to customers
- loss of contracts. VCMs operating at higher weights had also been key to UK companies winning certain construction projects
- reduction in sales. Respondents explained that the 2018 regulatory changes had already negatively impacted the industry, with VCM sales falling from around £55m per year prior to the 2018 restrictions to around £9m per year after
- negative impact on UK manufacturing. The UK manufacture of certain VCMs (specifically the 44t VCMs on 5 Axles with concrete pumps) would likely end, despite foreign demand, due to the lack of a strong domestic market. Respondents provided examples of manufacturing companies having already moved operations abroad
- job losses. The loss of contracts, reduction in sales and the loss of UK manufacturing would ultimately lead to layoffs of highly skilled workers. The current VCM workforce was estimated at around 15,000 workers

1.4 Competition

The Call for Evidence document noted that permitting higher weights for a specific type of goods vehicle provided an advantage over other operators required to work within standard limits set by law. Any longer terms changes to the operational weights would therefore need to comply with Competition Law and the Public Sector Equality Duty. Respondents however were divided on the implications for competition of VCMs at different weights.

For those in favour of higher weight VCMs, the requirement to operate at a maximum of 32t was said to lead to a reduction in market competition. The operation of higher weight VCMs was described as preventing foreign multinationals running traditional barrel mixers from:

- charging domestic and small business customers premiums for delivering loads below full capacity (that is, part-load charges)
- overcharging customers in remote and rural communities

Instead, respondents suggested that allowing VCMs to operate at higher weights indefinitely would safeguard the future of the industry and enable expansion:

“If the VSO is made permanent, I would be able to expand our business and invest in new VCMs with confidence.”

In contrast, those who supported the end of the weight limit exemption felt it would be necessary to ensure fair competition between VCMs and other vehicles delivering the same product through a different production method. Allowing VCMs to operate at higher weights was seen as unjust to operators of traditional barrel mixers.

"They [VCMs] exist in a competitive market with other vehicles types selling the same product and should not have an unfair advantage."

These respondents stated that VCMs and barrel mixers serve different purposes within the concrete industry, supplying a wide range of customers. For example, VCMs are better suited to certain sites and rural locations than barrel mixers. This advantage exists at both higher and lower operating weights. Therefore, there would always be use cases that favour one or the other method of delivery, even after removal of the exemption.

1.5 Safety and compliance

As set out in the Call for Evidence document, construction-related vehicles (including VCMs) have been a strong focus for enforcement and standards work during the past 10 years, to control risks to cyclists and pedestrians. Improving the interaction of construction-related vehicles and cyclists and pedestrians was also one of the reasons for VCMs being brought into annual vehicle testing and operator licensing.

Those who supported higher weight VCMs suggested that there were no compliance or safety concerns around the indefinite extension of VSOs beyond 2028 without additional conditions. Several reasons were given for this view:

- manufacturer design weights already safeguard the driver, other road users and the public, with VCMs at 38.4t and 44t operating normally in other EU countries
- the additional safety checks introduced as part of annual vehicle testing in 2018 had further ensured the safety of the vehicles
- operators have processes in place for monitoring the weights of laden VCMs on a daily or more frequent basis. These include the use of maximum weight lines on vehicles, on-site weigh bridges and loading shovels with weigh cells
- DfT had been satisfied in 2018 that setting a maximum weight for 4-axle VCMs lower than their design weight through the VSO regime (38.4t down from 42.48t) had been sufficient to ensure safe use

Respondents cited a lack of reported issues in the 5 years that the VSOs have been running as rationale for extending the weight limit exemption indefinitely. Requiring VCMs to operate at 32t would instead it was claimed necessitate more road miles, exposing other road users to greater risk.

These respondents also suggested that extending the weight limit exemptions beyond 2028 would encourage operators to invest in new VCMs with a higher safety specification:

"I think the current regulations that allow operation of 4 axle vehicles to 38.4T do not need adapting. These vehicles are operating efficiently and safely currently without any reported issues."

In contrast, those who opposed the operation of higher weight VCMs, argued that increased safety risks to road users was still a legitimate concern, although respondents did not further elaborate in this.

2. Views on policy options

This chapter explores respondent views regarding the three policy options presented by the DfT in the Call for Evidence. The policy options presented possible future approaches to the weight limits for VCMs. The policy options explored in this section were described in detail in the Call for Evidence introduction.

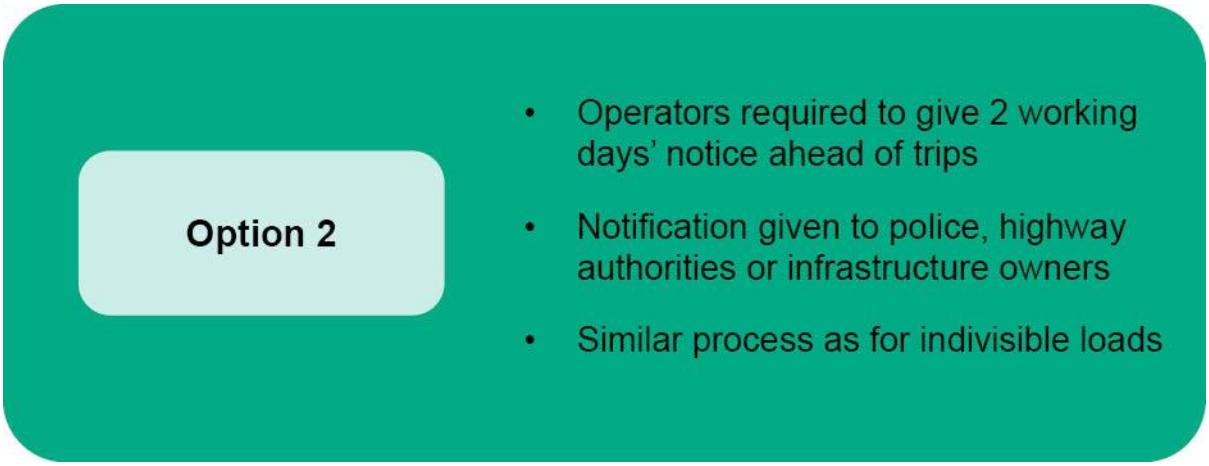
2.1 Option 1: Maintain the current exceptional temporary arrangement for VCMs

Figure 1. Policy option 1

Under option 1 the current temporary arrangement for VCMs is maintained. Respondents were divided in their views towards option one. Those in favour of higher weight VCMs opposed this option as it would require the vehicles to comply with the standard 32t weight limits from 2028 without exception. Those against the use of higher weight VCMs supported option 1 as it would bring VCMs in line with other goods vehicles. Some in this group preferred an earlier ending to the exemption, requiring VCMs to comply with the 32t limit before 2028. For this group, any policy other than option 1 would be an amendment of the commitment made to the sector by the Government in 2018, with a late extension seen as unjust to operators of traditional barrel mixers.

2.2 Option 2: Allow all VCMs to operate at weights of the temporary VSOs if there are advanced route notifications.

Figure 2. Policy option 2



Under Option 2, all VCMs would be allowed to operate at the weights of the temporary VSOs if they give 2 working days' notice of all journeys to the relevant road and infrastructure care takers. All respondents were in opposition to option 2, however the reasons for this varied. Those in favour of higher weight VCMs argued that option 2 would excessively limit VCM operations. It was also considered unnecessary given existing route planning practices and to be too resource intensive for operators and road authorities. Those against the operation of higher weight VCMs opposed option 2, arguing it is based on a policy that is not applicable to concrete (that of indivisible loads).

2.2.1. Limits on operations

The Call for Evidence document noted that option 2 can only be useful for operations that can be planned sufficiently well in advance for the notification process to be done in time. The DfT recognised some VCM operations are planned on shorter timescales and would be out of scope for this option.

However, the Call for Evidence document put forward that key and large parts of the markets within which VCMs operate could adapt to advance planning. Examples included the deployment of VCMs in major construction projects, in scheduled infrastructure engineering works (for example overnight motorway or rail works) and in single-place residential work.

Respondents in favour of higher weight VCMs however felt option 2 was incompatible with the current delivery system used by VCM operators. They argued that 80% of VCM operators' customers order concrete for same day delivery or for emergency repairs. Given this, drivers are unable to plan trips in advance and often must change route mid-delivery. They estimated

that under option 2 only 20% of current deliveries could be fulfilled and that few, if any, operations could be adapted to meet the advance notification requirement.

> *"Option 2 is not a practical option. The business model for operating VCM's means that the driver must make dynamic decisions about routing depending on changing customer demands on site, therefore this cannot be planned."*

2.2.2. Resourcing

An additional view held by those in favour of higher weight VCMs was that option 2 would be expensive and resource intensive for VCM operators, police and highways authorities to implement. They argued that implementing option 2 would require:

- costly hiring of new staff by operators to plan and produce advance route notifications. VCM operators indicated that they do not currently have the resource needed for planning and producing advance route notifications
- increased capacity within police and highways authorities

As such, option 2 was seen as not currently practicable, even for the 20% of VCM operations that could continue under an advanced notifications regime.

2.2.3. Route planning standard practice

Finally, those in favour of higher weight VCMs viewed the introduction of advanced notifications as unnecessary for VCMs. The existing notification regime was designed for goods vehicles carrying loads that cause safety or weight problems or disrupt the smooth running of the road network, such as requiring road closures. They did not see these circumstances as applicable to VCMs. Further, they argued that VCM drivers have good awareness of where weak structures are located and already take measures to avoid them. Advance route planning was considered a widespread practice throughout the sector. As such, advanced notifications would lead to little improvement in protecting vulnerable infrastructure over existing procedures.

2.2.4. Inapplicability of rules for indivisible loads

Currently some special types of vehicles (including some engineering plants) are allowed to operate at higher weights than standard vehicles because of the load they carry or the way the vehicles have to be designed, that is, their loads cannot practically be further broken down (indivisible loads). The Call for Evidence document stated that VCMs are a clearly identifiable type of vehicle and have important characteristics of engineering plants but carry loads that can be split and can physically be operated effectively at the usual maximum weights applicable to similar configurations of vehicle.

Those who were against the use of higher weight VCMs, agreed with the assessment in the Call for Evidence document. They felt that option 2 was an overextension of the rules of indivisible loads as concrete is inherently divisible. The concrete carried by a VCM is, in fact, not mixed until the moment it is delivered. They, therefore, argued there was no rationale for VCMs to have a different weight limit to other HGVs under the conditions of option two.

2.3 Option 3: Allow for further VSOs until further notice, subject to vehicle age and operator being accredited by the DVSA for Earned Recognition

Figure 3. Policy option 3

Under Option 3, VCMs would be allowed to continue to operate at the weights of the temporary VSOs until further notice, subject to the age of the vehicle and the operator being accredited by DVSA for Earned Recognition (ER). Respondents were divided on option 3, with views given both in opposition and support. Three distinct reasons were given: the policy would improve industry standards, it was unnecessarily bureaucratic, and it misused the ER scheme.

2.3.1. Improving industry standards

Of those in favour of higher weight VCMs, some supported option 3 as a way of potentially improving driver and vehicle standards across the concrete industry. They explain that some VCM operators engage in non-compliant practices and rewarding them for DVSA accreditation with a weight exemption could promote better compliance with regulatory standards. However, there was a general lack of awareness of whether the ER scheme is appropriate to be used as a criterion to enable option 3. Respondents welcomed more clarity on how the policy would operate in practice.

2.3.2. Adding bureaucracy

Others in favour of higher weight VCMs opposed option 3 as adding extra unnecessary bureaucracy to concrete delivery. They argued the additional requirement of ER accreditation is not a viable option for some small VCM operator companies given the resources required for the application process. Generally, operators declined to comment on whether they would seek to join the scheme if option 3 was put in place.

2.3.3. Misusing the Earned Recognition scheme

The group opposed to higher weight VCMs argued that option 3 extended the ER scheme beyond its original purpose, opposing the option on these grounds. Those who held this view argued the scheme was designed to reward high-performing companies with less burdensome standards compliance monitoring. Under this proposal, ER would instead enable operators in one specific sector to change the standards they are expected to reach, which was perceived as a misuse of the scheme. They emphasised the lack of a clear rationale for allowing VCMs to operate at higher weights under these conditions.

2.4 An alternative approach

Given their opposition to option 3 on the basis of added bureaucracy, those in favour of higher weight VCMs proposed an alternative fourth option, the indefinite extension of higher operating weights for VCMs without additional conditions (including removal of the requirements on vehicle age). This would safeguard the use of these vehicles by operators to the end of their usable life, rather than the 12th anniversary of first registration. In their view, additional requirements for driver accreditation were unnecessary, given existing high levels of compliance with loading and safety standards within the industry.

3. Environmental and road wear implications

This chapter examines respondent views on the impact of the VCM weight limit exemption on the environment and road and infrastructure wear.

3.1 Views on environmental benefits

Respondents had opposing opinions on the environmental impact of the exemption. One group felt higher weight VCMs had a positive environmental impact while another group described their impact as negative or neutral. Responses revolved around two main themes, presented below: carbon emissions and water wastage.

3.1.1. Carbon emissions

The Call for Evidence acknowledged that one effect of more weight carried per vehicle would be fewer journeys and, therefore, a lower associated environmental impact. Respondents in favour of higher weight VCMs echoed this statement. They estimated that the additional road miles resulting from removal of the VCM weight limit exemption would contribute 120,000t of CO_2 to the atmosphere each year. An overall increase in mileage and vehicles on the road would also lead to greater road congestion and, as a result, increased air pollution.

Respondents stated that there was no published Environmental Impact Assessment prior to the reduction of VCM weights in 2018. Responses reflected on other environmental implications that they said had already resulted from the 2018 regulations. For example, operators who had intended to replace their VCMs at 5 years old, now planned to utilise them until 2028 (as new post-2018 VCMs are not covered by the VSO arrangement). Older VCMs were considered less fuel efficient and caused more pollution.

Contrastingly, other respondents viewed the current weight limit exemption as having a negative impact on the environment. They argued that heavier vehicles require greater amounts of fuel to operate leading to larger amounts of CO_2 emissions (although estimates were not given). Others felt that transport contributes only a small amount of the concrete industry's CO_2 emissions. It was therefore considered not a compelling argument for maintaining the weight limit exemption for VCMs.

3.1.2. Water wastage

Another consideration raised by those in favour of higher weight VCMs was the amount of waste the vehicles produce in comparison to barrel mixers. They argued that VCMs can deliver the exact amount of concrete a customer needs by keeping the components separate

and mixing them on site. Drum mixers in contrast can only deliver a set amount of premixed concrete, meaning unused concrete dries on site and ends up as waste.

Additionally, barrel mixers were said to use substantially higher volumes of water to clean the interior and wash out dried concrete. Estimates given were:

- for standard daily cleaning, 1,500 litres per day for a barrel mixer, compared to 50 litres for a VCM
- for flushing out dried concrete, 59 litres per tonne for barrel mixers. VCMs do not require this process and therefore avoid wasting water in this way

These respondents felt that, if the exemption was removed and barrel mixers became the preferred way of delivering concrete, the concrete industry would become more wasteful as a result.

> *"By carrying 10mtrs of material on a load, our carbon footprint is drastically reduced. We only mix the amount the end user wants so there is no return loads or waste produced."*

3.2 Views on the impacts on bridges and road surfaces

Similarly, respondents had contrasting views on the impact on roads and infrastructure of higher weight VCMs. Those in favour of higher weight VCMs argued they do not have any greater impact that barrel mixers, while others argued it contributes significantly to greater wear.

Those in favour of higher weight VCMs disagreed with DfT's estimate that the higher weights increase road wear by between 110% and 220% above the standard 32t weight. They suggest that this does not account for the "milk round" delivery system that most VCM operators use. This system involves VCMs being loaded to maximum weight limits on departure from the depot and off-loading across multiple deliveries in one journey. This means that VCMs only operate at their maximum limit of 38.4T at the start of their journey, but for the remainder will weigh at or below the 32t standard maximum weight for HGVs.

> *"[Respondent] challenges the DfT's road and bridge 'wear' percentages because they are based on a false assumption of VCMs running all day at full capacity."*

These respondents further argued that VCMs are specially designed to bear high weights, with wide tyre configurations to reduce pressure on the ground. As such, VCMs were considered to have a better weight distribution than other road vehicles. They argued that removing the weight limit exemption would increase road wear by requiring an increase in the number of journeys needed by VCMs to deliver the same load. Additionally, satellite navigations (Satnavs) systems are widely used throughout the industry to plan journey routes that avoid weak or vulnerable structures, further reducing risk of infrastructure damage. However, these respondents acknowledged that higher weight vehicles incur greater road tax

charges under the current tiered system, with operators suggesting they would comply with proportionate increases to cover any increased road wear costs that might occur.

In contrast, those against the use of higher weight VCMs agreed with DfT's road wear estimates and maintained that VCMs operating at higher than standard weights posed an increased risk to roads and infrastructure over time. They suggested that VCMs operators be required to cover the costs of any repairs resulting from extension of the VSO weight limits.

Conclusion

This chapter summarises the main arguments made by respondents in favour or against the operation of higher weight VCMs, and the implications for the policy options.

Ability of VCMs to carry out specialist services would be limited by standard weight limits

The ability of VCMs to service the domestic and small business markets, as well as rural customers, would be limited by reducing their maximum weight. The weight restrictions would substantially reduce the payload per journey, most notably impacting their ability to perform a “milk round” delivery (that is, small amounts at different strengths to multiple customers) as well as emergency repairs work. This would in turn increase prices for customers, as barrel mixer operators could charge additional fees for delivering amounts below their maximum load.

Under standard weight limits, VCM operation would become more costly and less viable

In order to maintain current service levels, VCMs would be required to complete more journeys, leading to staff, fuel and maintenance costs. Their reduced capacity was said to lead to a significant loss of turnover per VCM each year. An unsustainable rate for many smaller operators. Other economic implications included loss of key construction contracts, reduction in sales of VCMs, and loss of UK manufacturing of 5 axles VCMs.

Imposing standard weight limits would ensure fairer competition in the concrete sector

Bringing VCMs in line with other goods vehicles would end their current competitive advantage over traditional barrel mixers. VCMs would continue to have a place in the industry as each vehicle type serves a different purpose within concrete delivery, regardless of permitted operating weights.

Road safety and wear implications are contested, while environmental benefits are clearer

Respondents contested whether the higher weight VCMs posed a greater risk to road safety and infrastructure than barrel mixers. However, requiring them to operate at lower weights

would inevitably lead to greater road mileage, and therefore greater pollution and CO_2 emissions.

Arguments on efficiency and the environment are not unique to VCMs

It was stated that arguments put forward on the benefits for efficiency and the environment of higher weight vehicles are not unique to VCMs and therefore present no meaningful rationale for a specific exemption in their case.

Implications for the policy options

While implications for the policy options are difficult to assess given the limited number of responses to the Call for Evidence, those in favour of higher weight VCMs appear to generally reject policy option 1 (no change) and 2 (advanced notifications) outright. There is some interest in better understanding how option 3 (further VSOs with earned recognition) would work in practice, however an alternative fourth option was preferred. This would grant the indefinite extension of the higher weight limits for VCMs without restrictions on vehicle age or driver accreditation. Those against the use of higher weight VCMs appear to see any policy approach other than option 1 (the ending of the weight limit exemption as planned in 2028) as inappropriate, given that they disapprove of higher VCM weights on principle (for reasons of competition or safety).