Submitted To:
California High Speed Rail Authority
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RFEI No.: 15-02
Response to the Request for Expressions of Interest for the Delivery of an Initial Operating Segment

GLOBALVIA INVERSIONES S.A.U.

1. Firm Experience and Team Structure

Globalvia is a worldwide infrastructure concession leader. Globalvia is ranked second by number of concessions according to the 2014 Public Works Financing.

The company was incorporated in 2007 by FCC and Caja Madrid (now Bankia), both internationally recognized Spanish companies whose Concession activity started back in 1991 and 1997 respectively. The company is being acquired by three pension funds from Canada, UK and Netherlands. They have already expressed their commitment to pursue large transportation project, either Brownfield or Greenfield, such as the California High Speed Rail.

Globalvia´s expertise and portfolio place it first worldwide as a Rail Investor and Operator of privately financed Concessions by number of projects.

Globalvia is seeking to expand and share its experience with the California High Speed Rail. The company has proven track record as a safe, diligent, effective and efficient operator. The company´s expertise includes train operation, construction procurement and management, ticketing, marketing, customer service and train maintenance among others. We will have local partners in every discipline.

One thing that has to be taken into consideration is the social and public consequences of the IOS selection. Globalvia has the experience to deal with all stakeholders resulting in the acceptance and embracement of infrastructures projects, consequently making every project a success.

All these capabilities position Globalvia as top option to become the investor and operator of the IOS of the California High Speed Rail.

Globalvia has looked at this project trying to use all past HSR experience and propose the best alternative to meet the goals of the State of California. Several aspects and risks of this kind of projects have been taken into consideration, such as interoperability among lines, system integration, competitiveness or funding. What we present is, from Globalvia´s experience, the best delivery solution for CHSRA to implement the first High Speed Rail in the US and, more concretely, the IOS.

Globalvia´s only goal is exactly CSHRA´s, which we learned through various meeting with the Authority, and that, is to have a HSR system up and running as soon as possible and to provide a first class service to millions of residents of both, Northern and Southern California. Globalvia is confident that there may be alternatives to achieve that.

Designating Globalvia as CHSR Investor and Operator will help deliver an efficient, safe, profitable and attractive service that will position California first in the US in terms of infrastructure. An effective Operation will ensure the residents' mobility and contribute to the social, economic and urban development of areas surrounding the CSHR.

Globalvia´s experience includes both, Infrastructure Operator and Equity Investor. The company invests in the projects it operates, which ensures the appropriate alignment of both interests with the Authority´s ones. The firm´s expertise covers construction management as it is usually the lead investor on the Equity side, in charge of procuring and supervising DB contracts.

Globalvia has worked with many contractors, rolling stock providers and suppliers worldwide with successful results achieved in all our projects. There is no preference in terms of who is the supplier as long as they are diligent and an effective delivery method is in place. Either contractors or rolling stock providers may have a short term objectives within these projects, while the operator has the long term vision. Therefore, this figure is key in ensuring all goals and incentives are correctly defined.

Globalvia has the experience to manage all aspects of the project. From an operator and investor perspective, Globalvia can handle constructions contract, testing and commissioning of rolling stock and supervise System Integration to ensure the compliance of all regulations and performance requirements. Incorporating these competences as soon as possible during the process will minimize all risks and consequently that will help the CHSRA to accomplish their objective.

One of the most important aspects that needs to be defined is the risk allocation in terms of revenues. Revenue risk on Greenfield projects is always something private investors are reluctant to accept. If the size of this project is born in mind this statement may be even more accurate. Particularly in this project it may look that the private sector is not able to bear revenue risk, but with an appropriate methodology, this objective might be achievable in corridors with significant and well known demand in which a modality shift study can get predictability. Therefore, an adequate structure is mandatory, but should this structure be found, we see room for sharing demand risk between public and private entities.

The team structure will depend on the final delivery method and scope. We intend to partner with the best American and International firms to procure the best value to the CHSRA. Globalvia always seeks to work with the most qualified Californian firms on every discipline since that would assure the required knowledge and expertise for this project.

Globalvia will include in its group, SENER Ingenieria y Sistemas (SENER), which is a worldwide leader in rail transportation, having performed design, project management / construction management, and systems integration services on over 10,000 miles of high speed lines. SENER has been involved as the Prime Engineer for the first HSR full P3 (infrastructure and full systems up to testing and commissioning, including six (6) miles of tunnel under the Pyrenees mountains, The International Union of Railways (UIC) entrusted SENER to draft its Handbooks for New High Speed Railways Developers, and Operations and Maintenance for both new generation lines and upgrading of the existing ones.

SENER Engineering and Systems Inc. (SENER USA), is a USA incorporated Company since April 2008. SENER USA is licensed to perform professional Engineering Services,

and Construction activities in the State of California. SENER USA currently has 40 employees, in three Offices in California including Los Angeles, San Francisco, and Sacramento.

SENER USA has been working with Public Sector clients including: Caltrain, LA Metro, and the California High Speed Rail Authority (CHSRA). SENER USA is currently the Prime Contractor in charge of the Engineering and Environmental Contract for the Palmdale to Burbank Section for the CHSRA, including the development of the procurement documents to be used for final design and construction.

SENER USA has a long relationship with other agencies, contractors, and professional engineering firms. This includes:

- XpressWest, for which SENER USA has provided engineering services;
- Contractors like Bechtel, Fluor or Skanska.
- Engineering Companies including HDR, Parsons Brinckerhoff, AECOM, CH2M, and others
- International and Spanish contractors and investors.

This background gives SENER a prominent position to advice on the best strategy to follow on the development of the CHSR network and operations.

SENER is proud to respond to the REFI recently launched by the CHSRA, under the lead of Globalvia.

SENER, within the Globalvia Team, will be a leading party of the design team including System Integration from conceptual transportation engineering studies (on the proposal of feasible IOS, both for Northern and for Southern California) to final design, EPC Systems construction, testing and commissioning, and maintenance. Within an appropriate structure, SENER will be able to participate in the equity of any P3 or DBOFM structure that can result.

Globalvia may adapt our vision for the California High Speed Rail to meet CHSRA preferred model. We have had preliminary contact with contractors and rolling stock providers in order to be ready to assemble the most prepared team to meet CSHRA´s goal for the selected delivery method.

Nevertheless, Globalvia is aware of the requirements and particularities of working in the US, and more concretely in California. It is Globalvia´s intention to work with small businesses, veterans, minority and women own businesses and local suppliers. Some early enquiries have been done in order to detect first class suppliers and partners. Globalvia may be also able to help the CSHRA to capture other sources of revenues, like for example using Enhanced Infrastructure Financing District (EIFD) models, include the best planning partners using our experience with HSR to emphasize Transit Oriented Development, helping the Authority to capture real state value or make the most of the infrastructure right of way for fibre or energy lines.

2. Project Approach

Globalvia´s delivery proposal is based on some relevant principles:

- Seeking the best value for the CSHRA in terms of cost, time and risk
- Ensure the best quality experience for riders of the CHSR
- Provide a delivery scheme that is attractive to the public and private sector
- Ensure that it is bankable by lenders from a size and risk perspective

Globalvia has been analyzing different delivery methods from other worldwide experiences seeking what would be the best scheme for this project considering its particularities. After all the evaluation and considering the delivery method key points are:

- Procure DBFMs for each component
- DBFOM for operations and rolling stock
- A Regulator responsible for defining technical and performance specifications and transfer of integration risk to private sector
- DBs for stations
- Revenue risk, in phases, transferred to the private

Under this model, the CSHRA will see that many of the risks will be transfer to the private sector, and what is more important, to the company´s whose expertise is best to handle them.

This method also seeks competition among contenders, what will provide best value for the state of California. The key is the balance between cost and risk for the public sector.

The size of the projects is another key factor. Reasonable size should be an objective, considering the overall dimension of the CHSR. That is why different DBFMs for civil works are recommended. For other components of the project, the vertical separation may differ in terms of sections, being those greater, from the one done for the civil works, since the amount of those contracts would be more feasible for private companies to bid.

Interface and integrations risk are some of the most relevant. Under this structure, with adequate, specifications from the operator and the engineering firm, could be transferred to the private contractors while the remaining risk for the authority would be minimal. Globalvia, as an Investor and Operator, would be able to help mitigate risks.

After all the analyses are done, it would become clear that Globalvia´s expertise proves our firm as best company to partner with in order to deliver an efficient, safe, effective and profitable HSR for the State of California.

3. Responses to Questions

3.1 Commercial Questions

3.1.1 Is the delivery strategy (i.e., combining civil works, track, traction power, and infrastructure) likely to yield innovation that will minimize whole-life costs and accelerate schedule? If so, please describe how. If not, please recommend changes to the delivery strategy and describe how those changes will better maximize innovation and minimize whole-life costs and schedule.

As stated before, Globalvia would like present what may be the best and more plausible method to deliver the CHSRA.

Globalvia delivery model summarizes as follow:

- Procure and maintain each High-Speed Rail component (civil works, track, signaling, traction power and systems) through DB or DBFM contracts of a size and scope which can be attractive to the market under the supervision and administration of a Regulator/Operator.
- Operations, Control Centre and Rolling Stock would be provided under the same contract DBFOM.
- A Regulator would be responsible for defining technical and performance specifications to ensure the full integration of all HSR components across the alignment. An Integration Office leaded by the regulator is proposed to manage the interface risk between contracts. The Operator, who has expertise in systems integration, should have representation in this office because would help the Authority to minimize risks and would facilitate the success of the HSR operation. The DBFM contracts should be supervised under this cooperative office.
- Stations and passengers areas (architecture) would be delivered as a DB contract; this contract can be split in different contracts which will be more attractive to the market. Broad planning efforts to maximize real estate value capture could be involved in the Regulator/Operator package to ensure coherence and maximum value for the Authority.
- Revenue risk may be transferred to the private sector under the right structure.

The delivery strategy which combines under the same DBFM contract the civil works and all railway infrastructures (track, traction power, signalling and systems) encourages whole life cost management and high degree of integration; however, the size and scale of the Projects (IOS South, IOS North or both) would be outside the delivery capacity of major industry companies due to the high capital costs, required guarantees and the significant risks. The larger the project, the less appropriate it

becomes for the private sector to hold construction and commercial risk. It is therefore unlikely to generate sufficient market appetite if these Projects were procured as single integrated DBFM contracts (IOS South, IOS North or both).

To overcome this issue and taking into account the delivery strategies of other HSR projects, Globalvia is proposing a delivery strategy where the civil works and the different railway components would be procured under separated DBFM contracts. Additionally, each component (civil works, signalling, etc.) would need to be split in packages that could facilitate contractor capacity and appetite.

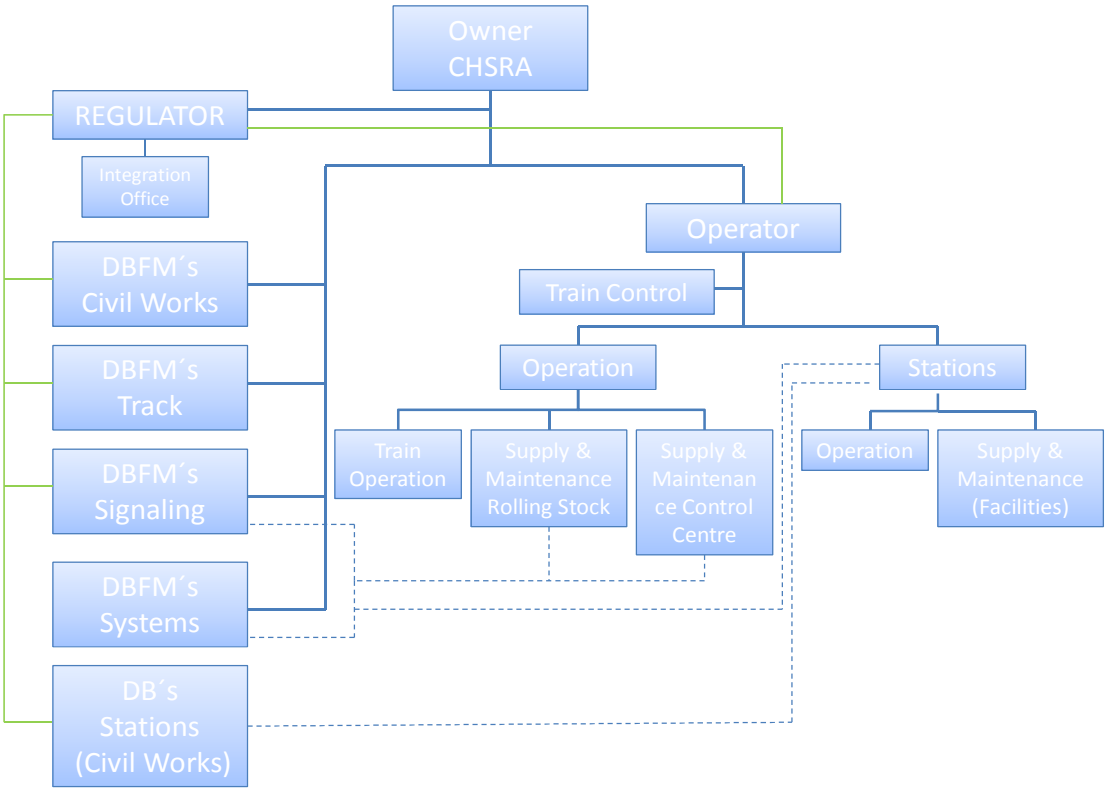
Some components of the HSR system, such as signalling, systems and rolling stock would require specialized technological expertise and products. Only a few global companies supply the advanced signalling systems and/or rolling stock suitable for HSR. For this reason, where feasible, these components should be packaged and procured in a separate competition, rather than from an element of a larger civil engineering tender, where the ability to create competition between bidding consortia would be constrained by the limited number of these specialist technology suppliers.

The proposed changes in the delivery strategy could maximize innovation and minimize whole-life cost as described below:

- The separation of works between contracts with specific technical and capability requirements will attract private sector interest and investment. The project cost will be reduced as a result of a high competition during the tender process.
- The specific DBFM´s contracts by components allows recognition that assets have different lifecycles and will optimize cost of future maintenance because the contracts will finalize with the asset´s life-cycle, then an open competition including technical improvements will be opened and the innovation will be maximized.
- Construction, maintenance and integration risk are effectively transferred to the party who is best able to manage such risks and overseen by the Regulator/Operator.
- The model enhances the ability to achieve appropriate risk transfer to the private sector improving the competition.
- The DBFM delivery model transfers delivery and whole life cost risk to the private sector who has a greater incentive to optimize whole life cost as the contract remains in its control for a much longer period.

This approach needs to be well-administered, since it may require a more detailed control and specifications from the contracting side. A more detailed explanation is developed in section 2.1.2.

The figure below illustrates the delivery strategy we are proposing:



Within the model, the CHSRA would be responsible for defining the framework, planning, technical requirements, skills and capabilities. The Regulator would play the role as the system integrator. As mentioned before, minimizing measures should be incorporated. Having pre-assigned operator instead of handling the infrastructure after or during the integration process may be the most important one.

As it is shown in the diagram, Globalvia is also considering that the operations and Rolling Stock would be provided under the same contract DBFOM.

That operation contract could be delivered using an SPV which should be responsible for the following scope of work:

- Train Control
- Operation of train services
- Operation of the Stations
- Supply, finance and maintenance of rolling stock.
- Design, construction, finance and maintenance of the maintenance and stabling facilities.
- Station facilities and systems maintenance

- Supervision of DB/DBFM procurements as necessary including, construction Management for Civil Infrastructure and Superstructure

This structure may differ from the CHSRA initial idea. Globalvia strongly suggest considering this approach since the benefits that comes along are remarkable:

- Only one contract is required, which minimize procurement costs and facilitates management
- Avoiding interface between separate contracts for operations and rolling stock provider. Within this scenario, the CHSRA eludes dealing with the possibility of non-availability from the rolling stock supplier and appeals from the operator
- Linking supply and maintenance for a significant part of rolling stock´s life encourages a whole-of-life approach by the contractor. The best value for money outcome, since contractors would be inherently incentivized to reflect the maintainability of the system in its design.
- Long term risk transferred
- Maintenance and operating cost risk
- Having the private sector paying part of the rolling stock investment trough ridership revenues
- Best value by joining rolling stock supplier and future operator efforts and interests

Under this strategy the benefits of combining efforts with the operator early in the process become obvious, since the contract would incorporate the rolling stock detailed specifications that should be used to defined the other contracts including signalling and civil works.

Having Globalvia as operator under this structure, whose interest is not selling rolling stock, will guarantee the interoperability of the project with other rolling stock providers and therefore opening competition in the future. Interoperability risk should be constantly kept in mind, since selecting one specific rolling stock should not affect future procurements.

We believe that operator scheme allows a flexible model in accommodating future scope changes such as an access regime, several train operators with a unique train control. It becomes very important that the operator, which is the one in charge of providing the services, is responsible of the Control Centre. The operator should be the entity detecting and directing the repairing works. With horizontal separation of train services by market or product could either be managed by a separate operation company (i.e. Long Distance Services or commuting services…)

Other further advantages of the model Globalvia is proposing are that the operator should be able to better manage ongoing infrastructure, superstructure, system, traction power and rolling stock assets maintenance requirements, both in terms of quantum and timing, in a manner which would have the least impact on its customers.

This is the reason why during the operational phase, the operator should manage and coordinate the overall maintenance providers.

During a one-on-one, Globalvia is willing to discuss alternative contracting processes for the various components such as the DBFMs which could eliminate or mitigate integration risk.

3.1.2 Does the delivery strategy adequately transfer the integration and interface risks associated with delivering and operating a high-speed rail system? What are the key risks that will be borne by the State if such risk transfer is not affected? What are the key risks that are most appropriate to transfer to the private sector?

In our opinion, there are some key risks, including:

- Integration Risk:

The delivery proposed needs to be balanced against the interface risk that could exist between contractors delivering different components or packages. For instance, there are interfaces between the individual "geographic" packages and between infrastructure works and systems. Given the relatively high number of packages needed, the CHSRA would need to impose a high degree of both technical and performance specifications in the DBFM contracts to ensure consistent and interoperable standards between packages. Additionally to mitigate that risk clauses in the contracts that transfer integration and availability risk of the components to the Contractors could be done. Each contractor should be responsible for integrating their system with the adjacent systems. Also, the DBFM contract should define quality and availability indicators which will define the level of service and determine the payments that the contractor will receive.

Nonetheless, penalties and contract revisions should be the last recourse. Even if the CHSRA has to bear a residual risk of integration, having the operator responsible for providing the service from day minus 1, should be a requirement to achieve this mitigation. Adequate specifications, design and incentives definition should be a priority before launching the competitive process. The results of a diligent pre-launching phase and having the operator´s support would be a more industry acceptable and risk and cost efficient process for the public sector.

The systems integration between rolling stock, signalling, and systems (communications, operational and local control centre (OCC), SCADA, Telephone, Passenger Information System…) is one of the biggest risks. We are proposing a double integration, horizontal (between HSR components) and vertical (between "geographic" packages). The Regulator through Integration Office, where Globalvia as operator and Sener as Engineering form, would play a major role, would oversee the delivery of HSR System against technical and performance specifications to ensure the interoperability of the system.

The maintenance risk for infrastructure, superstructure, signalling and system would be transferred to private sector contractor. The operator assumes the operation and rolling stock maintenance. This approach could mitigate interface risks between rolling stock maintenance and train services during the operation phase.

Considering the Construction risk and taking into account the size, scale and technical complexity of the infrastructure assets packages, the delivery and construction risk would be transferred to private sector by means of DBFM contracts.

- Ridership and revenue risk.

Transferring the revenue risk to the private sector (Operator) offers Authority the best opportunity to incentivize appropriate operator related to commercial policies and train services efficiency; however, it is unlikely that the operator could assume the full revenue risk associated until the system is proven because this risk is heavily affected by factors outside the control of the private contractor such as the provision and relative cost of competing modes and the general performance of the economy. Lenders would most probably require some degree of certainty on the revenue side in order to finance the project. This certainty will provide value to the CHSRA by better finance condition that would revert on better proposals from private sector.

Globalvia´s proposal includes sharing ridership risk, including during the early stages of the operational phase. The operator may be interested in a mechanism to share a degree of revenue risk with the Authority in the early years until ramp- up end in exchange for some assurance of a revenue source.

Globalvia is looking forward to explore the kind of revenue structure that could adequately meet public and private interest.

In the ramp-up the SPV should receive availability payments from Authority for making the train services available or might receive all or a share of passenger revenue. In the second phase (when the ridership has been demonstrated) the Operator can fully assume the revenue risk.

From Globalvia´s perspective, this contract structure stimulates the operator not only to ensure the correct service is provided, but also to maximize the ridership of this new infrastructure. CHSRA may benefit by letting the operator to decide the services to be provided to better adapt to the ridership of the corridor.

It is important to highlight that there may be more and less profitable corridors. Opening first the most beneficial should be a priority. In spite of that, there may be other social or public reasons that reinforce the need of a different strategy. An in-between solution may be achievable by opening some of the positive cash flow corridors and direct this income to the deficit ones and so providing a new source of funds.

3.1.3 Are there any other components of a high-speed rail system that should be included in the scope of work for each project (e.g., rolling stock, train operations, stations)? If so, how will this help meet the Authority's objectives as stated in this RFEI?

Currently, the high-speed rail stations are not included in the scope of the DBFM Contracts. The construction of the stations (architecture) can be provided by means of a Design-Built Contract; however, the maintenance and the operation would be provided by the Operator as part of the Operation/DBFOM Contract.

There should be benefits from procuring and constructing the stations as part of a single contract, given they are likely to have a common risk profile (specific civil works) and synergistic benefits. Likewise, large scale planning efforts to provide efficiency and uniformity in concept may be necessary to set up a program to maximize real estate value capture.

Stations are an important component of the passenger railway network. A well located, designed, and operated station could increase the demand for rail travel by allowing passengers safe and easy access to the services they require. Successful operation of the stations will benefit the Train Operator, for this reason the operation and maintenance of the station will be included in the Train Operator contract.

The train operator should outfit the station (systems, elevator, escalator, etc.) and procure the maintenance and operation. Maintenance of all the stations generates cost synergies (better contracts) and reduces interface complexities as it creates a single point of responsibility. The operator may sub-contract the maintenance components to maintenance specialists which should not create additional managerial complexities for the CHSRA's given this interface would then be managed by the operator.

Associating with Globalvia as operating before launching the DB process will ensure an excellent experience for rider by letting the operator first define and second supervise the construction. It is only in the operator's and the CHSRA's interest to provide the best possible service.

Having the maintenance and operation under the same contract permits the operator to react easily and faster and ensure safe and reliable train services to the customers.

The same will happen with the Operational Control Center that supervises, manages, and controls HSR system operations. Such facilities are connected to all applicable signalling and monitoring systems of the system and have direct communications with rolling stock drivers, station managers, security forces, and emergency services. The OCC will be operated under the Operation contract to facilitate the train services operation and to reduce integration risks.

3.1.4 What is the appropriate contract term for the potential DBFM contract? Will extending or reducing the contract term allow for more appropriate sharing of risk with the private sector? If the Respondent recommends a different delivery model, what would be the appropriate term for that/those contract(s)?

DBFM contract terms can be heterogeneous along the different areas and systems. While signalling systems require a complete renewal every 20 years (in accordance with international safety standards and electronic components life-cycles), not requiring relevant capital expenditures during that period (mostly OPEX), whilst electrification should gradually be renewed along 30 years, making the life-cycle cost relatively flat along that period. In order to encourage competition and efficiency, splitting the DFBM contracts in different areas allows a more accurate and fair risk sharing, being the common range between 20 and 30 years in most cases.

Civil works life-cycle allows a reasonable extension of the DBFM contract up to 30 or even 35 years. A longer extension might not be recommend since this improves very slightly the net present value of the investment but reduces competency notably.

Because of their technological evolution systems requires quite a different approach. As mentioned above, systems have to be completely renewed every 20 years. If this renewal is inside the initial DBFM contract there is no guarantee that the project will have cutting-edge systems (not even up-to-date ones) after the renewal. Thus, it is strongly recommended to ask for exactly 20 years, warranting an open competition and appealing technical improvements for the first renewal, whilst not increasing initial investment, since margins in this market allow a sound return of the investment in the 20 years period.

3.1.5 What is the appropriate contract size for this type of contract? What are the advantages and disadvantages of procuring a contract of this size and magnitude? Do you think that both project scopes should be combined into a single DBFM contract?

As mentioned in the answer to question 1, the main problem of the contract size proposed (IOS S, IOS N or both) is that the major industry companies could not provide the required guarantees due to the high capital costs and risks associated to the project.

Globalvia´s proposal consists of civil contracts around 3 or 5 billion, and not exceeding 6 billion USD. Other contracts such as signalling, could be in the range of 1 billion.

3.1.6 Does the scope of work for each project expand or limit the teaming capabilities? Does it increase or reduce competition?

The current scope of work for each project includes civil works, track, signalling and systems under the same DBFM contract. This scope is limiting the competition because the counterpart to a DBFM contract (the Developer) would consist of a consortium of companies that can integrate and deliver the different type of works, and it is known that there are only a few global companies capable of supply signalling suitable for HSR. The competition would be constrained by the limited number of these signalling specialists.

3.2 Funding and Financing Questions

3.2.1 Given the delivery approach and available funding sources, do you foresee any issues with raising the necessary financing to fund the IOS-South project scope? IOS-North project scope? Both? What are the liming factors to the amount of financing that could be raised?

It's clearly stated that the main issue affecting not only the financing but the whole project is its own size. Financing is not an exception but probably the most deeply affected aspect for the extremely big size of the project. As long as we are talking about a pure Greenfield project, that brings to the table an extremely high technical and operational complexity and the usual uncertainty about the future evolution of the demand. Any consideration regarding financing must take into consideration all these factors. As a mandatory consideration, the first project to be developed should be as self-sustainable as possible from an economic point of view and the election is a critical decision. There's no way to be 100% certain, but it is fairly clear to us that south is the right choice and we will expose the main reasons that support this opinion from a purely financial point of view.

The North as mentioned above has greater levels of uncertainty due to demand in addition to technical issues which will take much longer to address. However, for the sake of argument, it could be arguable that the technical, constructive and operational uncertainty is similar for the Northern and Southern sections. Consequently the remaining factor is the potential demand for the proposed service.

If we try to focus on the demand issue, we find that population of the southern area is greater that northern, which is a key factor. The more people served by the HS the higher utility for the Californian society and the lower probability a certain level of demand to fail; and the other is that we can get some extra financing from the usage rights of the track for the only other project to be incorporated in the southern HS net such as XpressWest (XW). It is necessary at this point to establish that this additional income would help not only the southern tranche but the whole project and provides

the whole project a common source of funds, non exclusively to be used in the South. We, the same as CHSRA, envisage the project as only one, in which the stronger and more robust segments must help the development of the weaker in order to have a solid self-sustainable service for the State in the long term.

3.2.2 What changes, if any, would you recommend be made to the existing funding sources? What impact would these changes have on raising financing?

All funding sources are necessary and must be used to making feasible the project. What is critical from our point of view is the way in which the funds can be made available for the project than the source of them, always provided that the more comfort the bidders can find about long term sustainability of these sources, the better the offers could be in terms of monetization as much as in mitigation of risks and reduce guaranties from CHSRA.

From a private sector perspective, it is important to have comfort enough about certainty regarding the project's long-term funding. Cap & Trade is an important source of funding. Nonetheless, there is no certainty on the future amount of this resource, even when reasonable projections show it increasing in the future. Ensuring the funds will be available by using different strategies and mechanism would unquestionably help to reach financing for the project, since the only risk the private sector would find assumable be project risk and not appropriation or public entities financing risk. Should this goal be achieved, and trying to avoid any direct State guaranty, a limited but comfort-providing mechanism would be to consider the amount of each year as a "priority funding level" for the next year, in the form of the direct C&T collected this second year will be directly assigned to the Project until the moment in which the previous year amount be collected, without prejudice of the 25% / 75% sharing of the resulting final amount in case this final amount to exceeding last year's. The Project would result in a more attractive to sponsors and comfortable for third party lenders.

3.2.3 Payment mechanism

3.2.3.1 Given the delivery approach and available funding sources, is an availability payment mechanism appropriate?

As repeatedly mentioned, size is the key issue for development of this project. Uncertainty about level of demand and pace of future growth are closely linked and would put the project out of rank of assumable risks for any private developer. The conclusion is absolutely clear for us in terms of an availability payment mechanism to be implemented in order not only to mitigate reasonably the risks but to having real chances of receiving realistic proposals at a first stage as stated in 4.1.3 4 (Demand and

revenue risk). It should be a basic guideline for structuring the PPP Agreement that an adequate risk transfer must be established. Implementation of an availability payment mechanism cannot be in any way a tool for the Private Partner to avoid the mandatory risk assumption but to assume all the risk that reasonably that partner can efficiently manage. The key point is that a full assumption of ridership risk won't be bankable from the very first moment of operation. An inappropriate design of the risk sharing scheme would result in a total collapse of the full project, and this is a scenario that all parties must avoid.

3.2.3.2 Could financing be raised based on future revenue and ridership?

Initial financing would not possible at a first stage but absolutely yes in a second phase when consolidated figures of ridership would be proven and consistent for several years. What we propose is a segmented scheme whereby the Authority provides an availability payment structure for certain aspects during the ramp-up period transitioning to a full revenue risk model. Several approaches can be considered to implement it and to determine what the trigger would to change the regime from the mentioned availability payment to another linked with ridership to allowing the full de-risking of the CHSRA respect to the financing of the project.

3.2.3.3 Would a revenue concession delivery better achieve the Authority´s objectives?

It would be just in the case of the solid established ridership level mentioned. In our opinion it won't be realistic for a concessionaire to raise third party funding for a project exposed at demand risk for any tranche of the proposed track corridor. We must insist here not only about uncertainty on ridership, but on the other issues the project incorporates (size, technical complexity on construction and operation, etc.)

3.3 Technical Questions

3.3.1 Based on the Authority´s capital, operating and lifecycle costs from its 2014 Business Plan, describe how the preferred delivery model could reduce costs, schedule or both. Please provide examples, where possible, of analogous projects and their cost and/or schedule saving from such delivery models.

Globalvia will provide answers to these technical questions, based on our experience in previous public partnership contracts where we have been involved.

After analyzing the capital costs for each section we deduce that the size of DBFM contracts encompassing all components (infrastructure, track, traction, systems) cannot be handled by one single company for a full section (IOS South, or North o both).

The preferred delivery model needs to focus on reducing cost and schedule always bearing in mind the optimal risk allocation for each contractor.

The best solution to reduce cost in construction and maintenance is by means of competition and this can be attained by having multiple parties interested in bidding for a project. One single contract encompassing infrastructure, tracks, traction and systems (either for IOS North or for IOS South or for both) would be easy to manage on the Authorities' side, however, it would reduce drastically the competition in the procurement process and the cost would increase. These types of contracts require big consortium gathering companies specialized on each one of the components. Some components, such as signalling, do not have many renowned companies in the market. This means that the number of consortia will be low to guarantee a competitive tendering process in other areas such as civil works or electrification where competition in the regular market is high. Furthermore, inside each consortium, companies trend to cover the integration risk, allocating big contingencies which increase the final price of the contract. The only benefit that this contract might provide is the reduction of the delivery schedule, since the number of public tendering process is reduced, but this benefit can also be obtained in other type of contracts.

Infrastructure (civil works (including tunnels and structures)), superstructure (track work), traction and systems (signalling, communications etc) need to be procured under separated DBFM contracts. This guarantees that the most economical offer is selected for each component due to high competition during the tender process. In case of infrastructure and track, the total amount of the contracts can also be a problem if it exceeds a certain amount (2 to 3 billion $ maximum per contract). (Problems to finance, problems to obtain warranties, construction bonds etc) This means that the length of the sections under procurement might be divided in shorter segments than those described in the RFEI document. In case of the tracks, traction or systems, price per mile is lower than infrastructure so sections tendered can be longer (3 or 4 sections in the full corridor (from San José to Burbank)) in order to obtain more synergies.

In order to guarantee the commissioning of the full system, it is also necessary that the final risk of integration of all components is assumed by the Regulator/Operator under the Authority. Within the delivery structure proposed, working jointly with Globalvia as operator, the Authority´s risk would be minimal.

The delivery model we are proposing is similar to the one implemented in some sections of the Spanish Northern Corridor of High Speed Rail and in one section of the Spanish Levante Corridor. ADIF (Spanish Railway Authority), as Contracting Authority, launched different PPP contracts for DBFM for track work, electrification, systems and communications along the corridor in multiple sections. ADIF required the winning contractor to incorporate a SPV where ADIF owned 10 %. The SPV financed the construction. ADIF is paying 40 % of the investment during the construction period (monthly payments) and 60% in biannual payments along 25 years once construction is completed. This clause encourages the contractor to accelerate the construction in order to advance the beginning of these final payments. Since these payments are guaranteed by the Authority, the financial costs are not too high compared to other PPP subject to demand or availability risk. Also, the contractor will have to maintain the asset for 20 to 35 years so they will make sure that the construction is done with the best quality standards in order to avoid maintenance cost overruns. This model benefits then from cost and schedule reduction. In order to cover the maintenance costs, the contractor will receive availability payments from the Authority. These payments will be subject to penalties in case that the contractual standards are not met.

Currently, 2 contracts are under procurement, 2 contracts under construction and 1 contract in operation. This last contract has been successful and is under study by several European Rail Agencies in order to apply the same model in future contracts. It consisted on the installation of signalling (ERTMS level 2), fixed telecommunications, GSM-R, traffic control facilities and, security and safety systems in the Levante Corridor between Albacete and Alicante (165 km). Also, the contractor had to finance and maintain the systems during 20 years, following the same model described previously. The final cost of the contract was 30% lower than originally budgeted by the Authority and the construction deadlines were met. The system is right now being maintained by the contractor efficiently while more than 10 trains per direction go through this corridor every day. After comparing traditional procurement processes with this DBFM model, we can confirm that the later gathers all the positive things required for completing this system successfully, in a timely manner and complying with high quality standards.

This model transfers the technical and technological risks associated with building and availability to the private sector. Also, it guarantees that the company in charge of the design and implementation stays for almost all the life cycle. It then guarantees quality, reliability and availability levels.

3.3.2 How does this compare to separately procuring each high-speed rail component (i.e., separate contracts for civil works, rail, systems, power separately)? Please discuss design/construction costs, operating/maintenance/lifecycle costs, and schedule implications.

As mentioned above, in the previous question, separately procuring contracts for each component has a better global economic result.

Regarding design, construction and maintenance, the benefit of assigning maintenance responsibilities to the DBFM Contractor is that the contractor will put more efforts in the design and execution since they will be responsible for maintaining the asset for several years. When the same project team is involved in the design, construction, and maintenance of the infrastructure, the project is designed as a whole from beginning to the end. This incentivizes the company responsible for building the system to make efforts to improve the design and to put more effort in QC/QA during construction in order to reduce maintenance costs in the future. In addition, innovations can be proposed and implemented during the design and construction phase which can lead to a reduction of the overall costs. Also, when maintenance costs are transferred, cost overruns incurred during the concession period will be assumed by the contractor. This risk is manageable by companies specialized in this sector, and do not entail an increase of the cost for the Authority.

It is important to highlight that maintenance contract cannot exceed the asset life cycle. When the asset needs to be renewed, it is beneficial to launch a new tendering process in order to have competition again and real market price adjusted to the new technological progress. Therefore, maintenance contracts do not need to exceed 20 to 35 years depending on the component (infrastructure and track 30-35 years, signalling and other systems: 20 years).

It will be important to agree in each contract that the responsibilities and penalties of each party regarding availability issues in order to guarantee an optimal operation of the system.

We propose to launch tenders under separate contracts following the next list:

- Civil Works (infrastructure) DBFM
- Superstructure (tracks) DBFM
- Stations (only architecture and electromechanical) DBF (maintained by the operator)
- Traction (substations and catenary): DBFM
- Signaling and Other Systems DBFM
- Rolling Stock Supply and Operation of the system: DBFOM

Globalvia, as an investor, could assist the authority under the performance of this task and potentially mitigate integration risk. Globalvia would be present in all phases and

would be informed of coordination and integration of the different contracts as future rolling stock supplier and operator of the system.

3.3.3 For each project, are there any technical changes to the respective scope of work that would yield cost saving and/or schedule acceleration while still achieving the Authority´s objectives? If so, please describe.

All tender processes need to encourage contractors to suggest technical or technological changes that will reduce the present value of the investment needed in the project. This means that all parties need to be involved in the conversations with the integrator (the Authority, the Investor/Operator, and the Rail Delivery Partner) in order to be aligned.

Regarding construction, the design parameters can substantially affect the total cost of the project. These parameters will define the alignments, curve radius, maximum gradient etc. Rolling stock is critical to define these parameters. For example, some trains can take steeper gradients than other in optimal performance. This will affect the needs of more structures, tunnels, retaining walls etc in the transition areas.

Also, the geological and geotechnical information available can affect the final budget of the project. Soil improvements and mass balance are critical in the cost of infrastructure. By avoiding new material supply and by reducing the excavation, the cost per mile of the civil works can be lower.

As described before, the idea is to launch several separated DBFM contracts. The tendering body needs to make sure in the tender documents that the proposals need to consider technological improvements that will entail a reduction on the maintenance costs. These improvements will yield cost savings in the future once the infrastructure is turned over to the Authority.

Also, the Authority, should rate higher those proposals that are environmentally friendly and that reduce affections to communities, traffic control, wildlife and landscape.