
Market Sounding Exercise for the First Stage of Desalination Plant at Tseung Kwan O (Plant capacity of 135 million litres per day)

Invitation to Respond

Water Supplies Department
Government of Hong Kong Special Administrative Region

February 2016

The Water Supplies Department (WSD) wishes to invite potential bidders, who may be interested in either Design and Build (D&B) or Design, Build and Operate (DBO), of the *First Stage of Desalination Plant at Tseung Kwan O* (the Project) to share their level of interest as well as corporate profile, experiences, expertise, and ideas on the Project.

1. The Market Sounding Exercise

- 1.1 Through the Marketing Sounding Exercise (MSE), we would like to understand potential bidders':
 - Level of interest in the Project
 - View regarding the proposed Project delivery arrangement of either D&B or DBO
 - Capability to undertake the Project under either a D&B or a DBO approach
 - Ideas on various aspects of Project implementation, including preferred delivery arrangement, optimal plant layout, employer's requirements, adoption of renewable energy and advanced desalination technology, etc. to meet the Project objectives of minimisation of footprint and maximisation of energy efficiency.
 - WSD will consider the relevant information gained through the MSE with a view to optimising the Project implementation arrangement to both meet the Project objectives and suit good market practices.
- 1.2 This is not a pre-qualification exercise to shortlist or prequalify any potential bidders. All information, views, and ideas of the respondent will be kept confidential and will not be used for any future tender evaluation exercise. Access to such information will be restricted to authorised personnel, including consultants' staff, strictly on a need-to-know basis. Potential bidders who do not respond to the MSE will not be barred from the future tendering exercise.
- 1.3 All engineering contracting organisations having capability and experience in undertaking D&B or DBO delivery of municipal-scale seawater desalination plant are encouraged to participate in the MSE.
- 1.4 In responding to the MSE, a respondent shall be deemed to have agreed to all the terms of this invitation. Respondents should note that the Government of the Hong Kong Special Administrative Region will not be responsible for any costs and expenses that may be incurred in responding to the MSE.

- 1.5 Submission of any information, data, analysis, or plans/drawings in support of responses is welcome. In particular, any plan/drawing, engineering calculation, or financial estimate in support of particular viewpoint or statement would be useful to WSD in understanding and analysing the MSE responses.
- 1.6 Interested potential bidders are encouraged to respond, as far as practicable, to the market sounding questions listed in **Appendix 1**. Relevant views and suggestions in relation to topics not mentioned in this document are welcome insofar as they will enhance the value for money proposition of the Project.
- 1.7 Responses to the market sounding questions should be returned to us preferably before **30 April 2016**
- Either by email to:
- musa_hs_tsang@wsd.gov.hk
- Or by post to:
- Consultants Management Division
Water Supplies Department,
6/F Shatin Government Offices,
1 Sheung Wo Che Road
Shatin, New Territories
Hong Kong
(Attention: Miss Musa H.S. TSANG)
- 1.8 Responses to the questions may be returned in batches and ahead of the date nominated above to enable our early review and feedback. WSD will take stock of the suggestions and comments received through the MSE and fine tune the tender/contractual arrangements. Respondents may be invited, when needed, to attend meeting(s) with WSD together with WSD's consultants, Black & Veatch, to discuss any points made in their submitted responses.
- 1.9 The MSE will continue until a point in time prior to the commencement of the formal tender exercise. Views or recommendations returned after 30 April 2016, but before the commencement of the tender exercise, may be considered.
- 1.10 Interested potential bidders or respondents may wish to check the Project website (<http://www.tkodesal.hk>) regularly for any updates of the MSE.

2. Project Overview

- 2.1 The Project objectives include:
- Consistent compliance with product water quality standards
 - Minimum environmental, social, and land use impacts on existing and future neighbouring communities and developments
 - Being able to operate reliably and cost-effectively for a wide range of water production outputs over extended periods
 - Minimisation of footprint of the desalination plant
 - Maximisation of energy efficiency
 - Completion and commissioning of the desalination plant within target timeline
 - Achieving asset durability, material integrity, and workmanship standards
 - Reasonable flexibility in coping with changes in plant performance targets, product water quality standards, and regulatory requirements

- Compliance with relevant risk, quality, environmental, health, safety, and asset management requirements and standards
 - Satisfactory transfer of technology and knowledge on the design, construction and operation & maintenance of the desalination plant to WSD
- 2.2 The Project will have a water production capacity of 135 million litres per day (MLD), which is the design capacity of the first stage of the desalination plant. It will also make provisions for future expansion to the ultimate capacity up to 270MLD. The Project comprises the following key components:
- Formation of the reserved site of about 10 hectares in TKO Area 137 to provide sufficient space for a desalination plant with an ultimate water production output at 270 MLD (the Site)
 - Design and construction of the desalination plant and associated facilities, including the intake/outfall system and desalinated water pumping station
 - Operation and maintenance of the desalination plant and the associated facilities for the designated operation period
- 2.3 Works will be carried out on the adjacent natural slope to mitigate the natural terrain hazards affecting the Site. Such slope mitigation works will be delivered using a traditional design-bid-build approach and is outside the scope of this MSE.
- 2.4 Product water produced by the desalination plant will be transferred via a fresh water main to the existing Tseung Kwan O Fresh Water Primary Service Reservoir (TKOFWPSR) and/or other existing fresh water service reservoirs. Detailed design of the fresh water main is being carried out by WSD Design Division and the main laying works will be arranged by WSD separately. This work package is also outside the scope of this MSE.
- 2.5 Preliminary Project design data are summarised in **Appendix 2-1**, **Appendix 2-2**, and **Appendix 2-3**, which contain the treated water quality objectives, seawater quality sampling data, and ground investigation results, respectively.
- 2.6 The Environmental Impact Assessment Report approved by the Environmental Protection Department (EPD) is available on line via:
- http://www.epd.gov.hk/eia/register/report/eiareport/eia_2292015/Front%20Page.htm
- Moreover, Environmental Permit has been issued by EPD. Details of the permit are available on line via: <http://www.epd.gov.hk/eia/register/permit/latest/ep5032015.pdf>

3. Proposed Procurement Model

- 3.1 WSD intends to procure the Project using a D&B or DBO approach. Specifically,
- The project delivery contractor will be responsible for design development, construction, testing and commissioning of the desalination plant.
 - Under the D&B approach, the project delivery contractor will be responsible for operations and maintenance of the desalination plant for an *initial* operation period (duration of which will be determined by WSD). The project delivery contractor will hand the desalination plant back to WSD (or another party nominated by WSD) upon completion of the initial operation period.
 - Under the DBO approach, the project delivery contractor will be responsible for operations and maintenance of the desalination plant for the Operation Period (duration of which to be determined by WSD). The project delivery contractor will hand the desalination plant back to WSD (or another party nominated by WSD) upon completion of the designated Operation Period.

- The detailed risk allocation and commercial arrangements, including payment mechanism, will be determined taking into account the MSE results.
- 3.2 WSD is expecting that the comments and suggestions received in the MSE will contribute to the development and fine-tuning of the procurement model.

4. Procurement Timeline

- 4.1 Subject to the progress on clearing of statutory requirements, it is aimed to commence prequalification by the end of 2016 with a short period (about 2 months) allowed for the submission of prequalification documents and to invite proposals from the prequalified tenderers in early 2017.

5. Capability of the Delivery Contractor

- 5.1 Given the complex nature of the Project, WSD expects the prime project delivery contractor (which may be a single entity or a joint venture) will have capability (i.e., project experiences, technical resources, and personnel) in both:
- Design, construction, testing and commissioning, and/or operations, and maintenance of municipal-scale seawater reverse osmosis desalination plants
 - Design and construction of civil engineering works, including site formation, foundations, building structures, and marine works in Hong Kong
- 5.2 Electrical, mechanical, and other technical or engineering discipline consultants or contractors may be engaged by the prime project delivery contractor as subcontractors, if needed.

6. Enquiry

- 6.1 If you have any question, please feel free to contact Miss Musa Hiu-sum TSANG at email address musa_hs_tsang@wsd.gov.hk or telephone number (+852) 2634 3576.

7. Disclaimer

- 7.1 This document is for reference and for the purposes of collecting market information only.
- 7.2 This is not a prequalification process of tenderers. Potential bidders that have not responded to this MSE will not be barred from bidding for delivery of the Project.
- 7.3 This document does not constitute any offer or invitation/solicitation of any offer in connection with the Project described herein. Neither this document nor any activities in connection therewith shall create any legal obligations or liabilities in any way on the part of the WSD or the Government of Hong Kong Special Administrative Region. Neither this document nor anything contained herein shall form the basis of any contract or commitment whatsoever.
- 7.4 The WSD will under no circumstances be liable to any fees, costs, expenses, loss or damage whatsoever arising out of or in connection with this MSE. No information and material received from the respondents will be returned.
