# *立法會*
# *Legislative Council*

LC Paper No. PWSC61/18-19
(These minutes have been seen by the Administration)

Ref : CB1/F/2/1(4)B

**Public Works Subcommittee of the Finance Committee of the Legislative Council**

**Minutes of the 4th meeting held in Conference Room 1 of the Legislative Council Complex on Wednesday, 14 November 2018, at 8:30 am**

**Members present:**

Ir Dr Hon LO Wai-kwok, SBS, MH, JP (Chairman)
Hon Charles Peter MOK, JP (Deputy Chairman)
Hon Abraham SHEK Lai-him, GBS, JP
Hon Tommy CHEUNG Yu-yan, GBS, JP
Hon Starry LEE Wai-king, SBS, JP
Hon CHAN Hak-kan, BBS, JP
Dr Hon Priscilla LEUNG Mei-fun, SBS, JP
Hon Claudia MO
Hon Michael TIEN Puk-sun, BBS, JP
Hon Frankie YICK Chi-ming, SBS, JP
Hon WU Chi-wai, MH
Hon MA Fung-kwok, SBS, JP
Hon CHAN Chi-chuen
Hon CHAN Han-pan, BBS, JP
Hon LEUNG Che-cheung, SBS, MH, JP
Hon Alice MAK Mei-kuen, BBS, JP
Dr Hon KWOK Ka-ki
Dr Hon Fernando CHEUNG Chiu-hung
Dr Hon Helena WONG Pik-wan

Hon Alvin YEUNG
Hon CHU Hoi-dick
Hon HO Kai-ming
Hon Holden CHOW Ho-ding
Hon Wilson OR Chong-shing, MH
Hon Tanya CHAN
Hon HUI Chi-fung
Hon LUK Chung-hung, JP
Hon LAU Kwok-fan, MH
Dr Hon CHENG Chung-tai
Hon KWONG Chun-yu
Hon Jeremy TAM Man-ho
Hon Gary FAN Kwok-wai
Hon AU Nok-hin
Hon Vincent CHENG Wing-shun, MH
Hon Tony TSE Wai-chuen, BBS

**Members absent:**

Hon Andrew WAN Siu-kin
Dr Hon Junius HO Kwan-yiu, JP
Hon CHEUNG Kwok-kwan, JP

**Public officers attending:**

| | |
|---|---|
| Mr Raistlin LAU Chun, JP | Deputy Secretary for Financial Services and the Treasury (Treasury)3 |
| Mr LAM Sai-hung, JP | Permanent Secretary for Development (Works) |
| Ms Bernadette LINN, JP | Permanent Secretary for Development (Planning and Lands) |
| Mr Donald TONG Chi-keung, JP | Permanent Secretary for the Environment |

| | |
|---|---|
| Ms Margaret HSIA Mai-chi | Principal Assistant Secretary for Financial Services and the Treasury (Treasury) (Works) |
| Mr TSE Chin-wan, BBS, JP | Under Secretary for the Environment |
| Dr Samuel CHUI Ho-kwong | Assistant Director of Environmental Protection (Waste Infrastructure Planning) |
| Mr TO King-ho | Senior Environmental Protection Officer (Food Waste Recycle Group) Environmental Protection Department |

**Clerk in attendance:**

| | |
|---|---|
| Ms Doris LO | Chief Council Secretary (1)2 |

**Staff in attendance:**

| | |
|---|---|
| Mr Raymond CHOW | Senior Council Secretary (1)6 |
| Ms Christina SHIU | Legislative Assistant (1)2 |
| Ms Christy YAU | Legislative Assistant (1)7 |
| Ms Clara LO | Legislative Assistant (1)8 |

---

Action

The Chairman advised that there was one funding proposal on the agenda for the meeting. He reminded members that in accordance with Rule 83A of the Rules of Procedure ("RoP") of the Legislative Council, they should disclose the nature of any direct or indirect pecuniary interests relating to the funding proposals under discussion at the meeting before they spoke on the proposals. He also drew members' attention to Rule 84 of RoP on voting in case of direct pecuniary interest.

**Head 705 – Civil Engineering**
**PWSC(2018-19)32 173DR Organic Resources Recovery Centre Phase 2**

2. The Chairman advised that the proposal, i.e. PWSC(2018-19)32, sought to upgrade 173DR to Category A at an estimated cost of

$2,453 million in money-of-the-day prices for the design and construction of the Organic Resources Recovery Centre Phase 2 ("ORRC2") in Sha Ling of the North District. The Administration consulted the Panel on Environmental Affairs on the proposed works on 19 July 2018. A report on the gist of the Panel's discussion was tabled at the meeting.

Treatment capacity of Organic Resources Recovery Centre Phase 2

3. Mr Tony TSE pointed out that in Hong Kong, about 3 600 tonnes of food waste was disposed of in landfills each day in 2016. He enquired whether it was possible to increase the designed treatment capacity of ORRC2, which was 300 tonnes per day.

4. Mr Tommy CHEUNG expressed objection to the proposed works and enquired about the counter-measures should the estimated amount of source-separated food waste to be collected and treated in ORRC2 fall short of 300 tonnes per day. Mr CHAN Han-pan and Ms Tanya CHAN also queried how the Administration estimated and ascertained that 300 tonnes of source-separated food waste generated by the commercial and industrial ("C&I") sectors could be collected from districts such as Sheung Shui, Fanling, Yuen Long and Sha Tin.

5. Under Secretary for the Environment ("USEN") responded that after the completion and commissioning of ORRC2, the Administration would review whether there was room to further increase its food waste treatment capacity. Under the contract, the contractor of ORRC2 was required to treat not less than 100 tonnes of food waste each day. If more than 100 tonnes of food waste was treated, the Administration would pay treatment fee to the contractor by the tonne. He further said that given the implementation of a municipal solid waste ("MSW") charging scheme ("Charging Scheme") and the planned launch of a pilot scheme to provide free collection service for mainly C&I food waste ("Pilot Scheme"), the Administration believed that there would be sufficient source-separated food waste for ORRC2.

Strategies to recover and handle commercial and industrial food waste and domestic food waste

6. Mr CHU Hoi-dick noted from the Administration's figure that about 1 274 tonnes of the food waste landfilled every day was generated by the C&I sectors. He pointed out that at present, some food waste and other waste generated by domestic households and the C&I sectors were disposed of in a co-mingled manner at the refuse collection points managed by the Food and Environmental Hygiene Department. Therefore, he enquired whether the Administration had underestimated the quantity of C&I food

waste and whether the categories of food waste could be further broken down into, say, expired food, leftovers and inedible parts such as fruit skins.

7. Assistant Director of Environmental Protection (Waste Infrastructure Planning) ("ADEP(WIP)") explained that the Environmental Protection Department ("EPD") would obtain statistical data by conducting random checks on refuse collection vehicles entering landfills and recording the respective weight of C&I or domestic food waste. Since the food waste collected by refuse collection vehicles was not source-separated, it was difficult for EPD to provide a further breakdown. However, taking note of Mr CHU Hoi-dick's suggestion, EPD would explore the feasibility of compiling, at source, breakdown statistics of food waste in future.

8. Ms Tanya CHAN pointed out that according to EPD's waste statistics, the 6.5% rise in the amount of food waste landfilled in 2016, as compared with 2015, was mainly attributable to an increase in C&I food waste. Meanwhile, the drop in the quantity of domestic food waste being disposed of showed that the Food Wise Hong Kong Campaign ("Food Wise Campaign") implemented by the Administration was somewhat effective in reducing domestic food waste. Ms CHAN was concerned about the measures to promote food waste reduction in C&I establishments. Mr LUK Chung-hung also opined that the Administration should continue to promote the Food Wise Campaign, and widely publicize and promote reduction, source separation and recovery of food waste in C&I establishments. Dr Fernando CHEUNG also considered that if the amount of food waste was not reduced, the problem could not be solved no matter how many more ORRCs were to be built.

9. USEN advised that over the past few years, the amount of domestic food waste showed a slight downward trend, whereas that of C&I food waste fluctuated with the economic environment. He stressed that waste reduction had been a key principle in the Administration's waste management policy and it would continue to encourage different sectors of the community to reduce food waste through the Food Wise Campaign. As at October 2018, over 780 organizations had signed the Food Wise Charter. Moreover, to complement the introduction of the Charging Scheme, provision of additional funding was proposed in this year's Policy Address for enhancing waste reduction and recycling work. The amount of the funding would be commensurate with the gross revenue to be generated from MSW charging so as to achieve the effect of "dedicated-fund-for-dedicated-use". Part of the funding would be used to launch the Pilot Scheme to deliver, free of charge, food waste of the C&I sector to ORRCs for treatment so as to promote source separation of C&I food waste. He also pointed out that according to overseas experience, only about half of C&I food waste could be recovered

for recycling. As such, if some 1 274 tonnes of source-separated C&I food waste was recovered in Hong Kong each day, the food waste treatment capacity of ORRC1 and ORRC2 (i.e. around 500 tonnes per day in total) should be sufficient to cope with it.

10. Dr Helena WONG said that members belonging to the Democratic Party supported food waste recovery. She enquired whether the Administration would consider providing food waste treatment services for C&I establishments under the cost recovery principle. USEN responded that after the implementation of the Charging Scheme, any person who discarded food waste as rubbish would be liable to pay a waste charge. The Administration believed that C&I establishments would reduce the disposal of food waste through source separation in order to save costs.

11. Mr CHAN Hak-kan enquired whether the Administration would consider treating domestic food waste in ORRC2 at the same time instead of only focusing on C&I food waste. Mr WU Chi-wai was concerned that the Administration did not have any strategies to promote separation, recovery and treatment of domestic food waste. He also asked whether the Administration's implementation of the Charging Scheme and adoption of "dedicated-fund-for-dedicated-use" approach in taking forward the Pilot Scheme would result in the levy paid by domestic households being used to subsidize C&I establishments in handling food waste. Dr Fernando CHEUNG expressed similar concerns.

12. USEN responded that the Administration would promote waste reduction, recovery and recycling on the basis of the Charging Scheme, complemented by various recycling facilities. Given that the treatment capacity of ORRC network, which would consist of five to six centres in future, would increase gradually, the Administration's current approach was to first deal with C&I food waste and promote source separation of food waste in C&I establishments through the implementation of the Charging Scheme and the Pilot Scheme. On the other hand, the Administration intended to launch the "Food Waste/Sewage Sludge Anaerobic Co-digestion" Trial Scheme at Tai Po Sewage Treatment Works ("STW") in 2019 and at Sha Tin STW in 2021-2022. It had also commenced a study on implementing territory-wide separation and collection of domestic and C&I food waste. A collection plan and the provision of required ancillary facilities would be formulated based on the actual local situation in order to make future arrangements for large-scale collection and delivery of food waste from domestic households and the C&I sectors to the relevant treatment facilities. In addition, subject to demand, part of the food waste treatment capacity of ORRC2 would be utilized for treating the domestic food waste collected through the free collection service in nearby areas.

13. Mr AU Nok-hin opined that the Administration's current approach to merely focus on C&I food waste was not a long-term solution to the food waste problem in Hong Kong. He requested the Administration to elaborate on the measures in place to expedite the implementation of separation and recovery as well as end-of-pipe treatment of domestic food waste, the timetable of implementing such measures, and the overarching blueprint for implementing food waste management measures such as developing the remaining ORRCs. The Administration advised that a written response would be provided after the meeting.

(*Post-meeting note:* The Administration's written response was circulated to members vide LC Paper No. PWSC36/18-19(01) on 27 November 2018.)

14. Mr HUI Chi-fung enquired how the Administration would assess the effectiveness of ORRCs and was concerned whether the Pilot Scheme and the Administration's approach to first deal with C&I food waste would in effect increase rather than reduce C&I food waste. USEN replied that C&I food waste had increased with the thriving local economic development. The Administration considered that appropriate measures should be introduced to facilitate food waste handling by C&I establishments.

15. Mr CHU Hoi-dick considered the government support for handling domestic food waste insufficient. Taking the Food Waste Recycling Projects in Housing Estates under the Environment and Conservation Fund ("ECF") as an example, the subsidy received by participating housing estates would be subject to a cap in the first two years and reduced to no more than 50% of the actual expenses in the subsequent two years (if the provision of subsidy continued), and there would not be any subsidy thereafter. Mr CHU urged the Administration to provide more support for the projects, such as subsidizing the electricity and staff costs for operating food waste processors, and assisting participating housing estates in handling the by-products generated in the food waste treatment process.

16. USEN advised that the Administration would, under the "dedicated-fund-for-dedicated-use" policy, provide additional funding for enhancing waste reduction and recycling work and consider supporting the projects suggested by Mr CHU with such funding. He also pointed out that 34 housing estates had launched food waste reduction and recovery projects under the support of ECF. Meanwhile, other support measures (such as providing free waste plastic collection services for domestic households) would be enhanced to encourage domestic households to reduce waste generation which would mean less waste charge.

17. Mr AU Nok-hin enquired whether the project of relocating Sha Tin STW to caverns would have any impact on the "Food Waste/Sewage Sludge Anaerobic Co-digestion" Trial Scheme to be implemented there. USEN replied that the existing Sha Tin STW would be relocated to caverns only after the completion of the aforesaid works project. Until then, the Administration would make use of the facilities in the existing Sha Tin STW to carry out the "Food Waste/Sewage Sludge Anaerobic Co-digestion" Trial Scheme.

Compost and renewable energy produced by Organic Resources Recovery Centres

18. Referring to the Administration's response (LC Paper No. PWSC27/18-19(01)) to his written enquiries (LC Paper No. PWSC22/18-19(01)) (Chinese version only) about the proposed works, Mr Gary FAN pointed out that ORRC2 could produce around 10 000 tonnes of compost by-products annually through food waste treatment and some of them would be reserved for use by government departments, farmers and members of the public for free. The response also quoted a literature review published in 2006 for reference, stating that a proper composting process might effectively treat and break down genetically modified ("GM") organisms and their genes according to a study. Mr FAN enquired, if the food sources of the food waste contained GM ingredients, how the Administration would ensure that the compost made from the food waste would not contain GM ingredients, how the composting process could effectively treat GM organisms and their genes, and how many studies had been conducted on the relevant subjects. Mr FAN also enquired about the details of anaerobic digestion and aerobic digestion in the food waste treatment process.

19. ADEP(WIP) explained that during the process of anaerobic digestion (i.e. in the absence of oxygen) at 37 degrees Celsius ($^{o}$C), acidification took place where the organic pollutants of food waste, including proteins, carbohydrates and greases, would first be decomposed by bacteria into fatty acids and amino acids, which would then be broken down into volatile fatty acids, and would finally be converted to methane (i.e. biogas) by methanogens. During acidification, the pH value would drop to 3-4, at which the GM organisms and their genes in food waste would decompose. In the course of composting after anaerobic digestion, food waste would further be broken down under aerobic condition at a higher temperature of 55-60$^{o}$C. The literature review mentioned in the Administration's written response, prepared by an author who had reviewed a number of research reports on the relevant subjects, suggested that proper acidification and

composting processes could effectively treat and break down GM organisms and their genes.

20. Dr Helena WONG enquired whether the food waste treatment technologies adopted in ORRC2 were more advanced than those in ORRC1, and whether the Administration would consider introducing into ORRC2 the food waste total recycling system developed by the Hong Kong Productivity Council ("HKPC"). Mr HUI Chi-fung and Mr WU Chi-wai asked whether the Administration would explore the introduction of new food waste treatment technologies when developing the remaining ORRCs.

21. USEN and ADEP(WIP) advised that the Administration had reviewed the food waste treatment methods in various places, and anaerobic digestion and anaerobic co-digestion were the most effective food waste treatment technologies in the world at present. The food waste treatment technologies adopted in ORRC1, which were mature and reliable, would also be adopted in ORRC2. As for the food waste total recycling system developed by HKPC, it was more suitable for treating food waste on a small scale. The Administration had conducted some studies and found it unsuitable for ORRCs which was required to treat large quantities of food waste. The Administration had kept in view the latest food waste treatment technologies and would keep an open mind on the technologies to be adopted in the remaining ORRCs.

22. Dr CHENG Chung-tai enquired about the use of the compost produced by ORRC1 and ORRC2. Mr AU Nok-hin enquired whether the Administration had conducted relevant assessments on the supply and demand and outlets of compost to ensure that the compost produced by ORRCs would be fully utilized.

23. USEN responded that ORRC1 and ORRC2 would produce a total of around 17 000 tonnes of compost per year. The demand of government departments and public works for compost, which was estimated to be around 20 000 tonnes per year, should be able to absorb the compost produced by ORRC1 and ORRC2 each year. Besides, the Environmental Bureau ("ENB") would also work with works departments to explore wider use of compost (e.g. in landscape works). The contractors of ORRCs might also sell the compost in the market and the prevailing market price was around $1,000 per tonne.

24. Given the large quantity of yard waste generated in Hong Kong each year, Mr CHU Hoi-dick enquired whether the Administration would consider adopting dry anaerobic digestion technology (i.e. mixing food waste with

yard waste to produce more compost) or other methods to reuse and recycle yard waste, and the relevant timetable.

25. ADEP(WIP) advised that the Administration was considering the best option to handle yard waste. As dry anaerobic digestion technology required larger quantities of yard waste and more space, it might not be suitable for Hong Kong. In fact, wet anaerobic digestion technology was more commonly used in Asia (e.g. Japan and Korea).

26. Referring to a supplementary information paper (LC Paper No. CB(1)142/18-19(02)) provided by the Administration for the Panel on Environmental Affairs, Mr Tommy CHEUNG queried whether the Administration had made reference to examples on the Mainland or just selectively cited overseas examples involving high construction costs when studying the food waste treatment facilities using anaerobic digestion and composting technologies in other major jurisdictions and their design and construction costs.

27. USEN advised that the food waste treatment technologies adopted in the food waste facilities in other major jurisdictions mentioned in the Administration's supplementary information paper were comparable to those in Hong Kong. The Administration did not make reference to the food waste facilities on the Mainland when conducting the study.

28. Mr CHAN Han-pan noted that the funding proposal for ORRC2 included a considerable sum for the construction of electrical, control and instrument installations as well as heat recovery and power generation systems. He enquired whether the Administration would consider selling biogas to The Hong Kong and China Gas Company Limited ("Towngas") directly for production of town gas in order to save the costs of constructing and operating relevant facilities. He also opined that if anaerobic bacteria generated sufficient heat during anaerobic digestion to maintain the temperature of the system at 37$^{o}$C (the temperature required for anaerobic digestion) and hence provide the heat required by ORRC2 during anaerobic digestion, it would not be necessary to construct any combined heat and power ("CHP") facilities there.

29. USEN and ADEP(WIP) responded that the Administration would construct CHP facilities in ORRC2 in order to make use of the biogas generated by ORRC2 to provide electricity and heat for the centre, which was an energy-efficient practice. He further said that the Administration would export some of the surplus biogas-generated electricity for use by the nearby government facilities where feasible. If there was still surplus biogas, consideration would be given to selling it to Towngas for production of town

gas or using it for production of electricity and feeding into the power grids of power companies. Moreover, since anaerobic bacteria was not able to generate 37°C of heat during the process of anaerobic digestion, ORRCs needed additional heating to raise the temperature to 37 °C.

30. Mr Tommy CHEUNG said that he did not object to constructing facilities in ORRC2 to provide electricity and heat for the centre, but he queried the benefits of constructing additional power generation systems to generate and sell electricity to power companies. Mr CHEUNG enquired whether the Administration would specify in the tender documents of ORRC2 that tenderers were required to quantify the cost-effectiveness of selling surplus biogas/electricity to Towngas/power companies.

31. ADEP(WIP) replied that tenderers for ORRC2 were required to set out their proposals for surplus energy export in the tenders, while income from the sale of energy would be taken into account in royalty payment on revenue under tender price rating. In gist, the surplus renewable energy export model and the relevant sales income formed part of the tender proposals of the tenderers. The Administration would work out the details with the successful contractor to ensure the relevance and cost-effectiveness of the proposals.

32. Ms Claudia MO enquired about the amount of electricity to be produced by surplus biogas annually, whether all the surplus electricity could be exported for use by the nearby government facilities, and whether the Administration had determined the proportion of surplus biogas/electricity to be sold to Towngas/power companies.

33. USEN advised that ORRC2 would use about one-third of the biogas it produced, while the remaining two-thirds could be converted to around 24 million kilowatt-hours of electricity annually (approximate to the total electricity demand of 5 000 ordinary three-person households in one year). Given that the electricity output of ORRC2 would depend on the amount of biogas to be produced and the supply was unstable, the Administration planned to construct additional power generation systems to first serve the ORRC and the nearby government facilities. The amount of electricity to be exported for use by the nearby government facilities or the proportion of surplus biogas/electricity to be sold to Towngas/power companies could not be ascertained at this stage.

34. Mr CHAN Hak-kan queried the Administration's justifications for selling the surplus electricity generated by ORRCs to power companies at the relatively low fuel price. Mr CHAN pointed out that the total surplus electricity generated by the two ORRCs was equivalent to the total electricity

demand of 8 000 households in one year. He considered that the Administration should sell the electricity to power companies at the usual price and use the income from the sale of electricity to, among others, subsidize transportation companies to deliver food waste to ORRCs. Otherwise, this might give rise to public concern about potential transfer of interests. Dr CHENG Chung-tai raised similar concerns.

35. USEN explained that regarding the setting of the sale price of such electricity, the Administration would discuss the issue on the premise that the electricity generation costs of power companies would not be affected and the tariff burden of the public would not be increased. Therefore, the Administration would use the marginal fuel cost of electricity generation saved by the power companies for purchasing such electricity as a base to set the sale price of electricity. If the Government increased the sale price, it was possible that the power companies would pass on the additional cost of purchasing the electricity to consumers, resulting in a rise in tariff.

36. The Chairman, Dr KWOK Ka-ki, Mr CHAN Hak-kan and Mr CHAN Han-pan requested the Administration to provide in writing the following supplementary information on future use of the biogas and renewable energy produced by ORRC2: (a) after providing electricity and heat for the ORRC and the nearby government facilities, how the Administration and/or the contractor of the ORRC would decide whether to sell the surplus biogas to Towngas for production of town gas or to sell the electricity generated to power companies; as well as the information on their cost-effectiveness; and (b) the justifications for selling the surplus electricity produced by the ORRC to power companies at the fuel price, as advised by the Administration.

(*Post-meeting note:* The Administration's written response was circulated to members vide LC Paper No. PWSC36/18-19(01) on 27 November 2018.)

Contractual and tender arrangements for Organic Resources Recovery Centre Phase 2

37. Mr Tommy CHEUNG and Mr CHAN Chi-chuen followed up on the tender arrangements of ORRC2, including the weightings assigned to different criteria under the marking scheme for the ORRC2 tender assessment, and whether the tender submitted by the contractor of ORRC1, if any, would be given additional scores. USEN advised that a summary of the marking scheme for the tender assessment was set out in Enclosure 1 to a supplementary information paper (LC Paper No. CB(1)142/18-19(02)) provided by the Administration for the Panel on Environmental Affairs earlier.

In brief, the marking scheme for the tender assessment consisted of two parts, namely "Technical Proposal" and "Tender Price", each constituting 50%.

38. Mr LUK Chung-hung pointed out that after a review of the employment rights and benefits of non-skilled employees engaged by the Government's service contractors conducted earlier, the Labour and Welfare Bureau ("LWB") proposed to revise the weightings in relevant tender assessments. Among others, the weighting of wage level, which was a technical assessment criterion, would be increased to no less than 25%. Mr LUK was concerned that the marking scheme for the ORRC2 tender assessment did not follow the above revision proposed by LWB.

39. USEN responded that in order to commence the works expeditiously, the Administration had invited tenders for ORRC2 before LWB proposed the above revision. ENB would handle matters involving employment rights and benefits of the contractor of ORRC2 according to established contractual arrangements.

40. Mr CHAN Han-pan queried if ORRC2 adopted the tender approach of ORRC1, i.e. a bundling "Design-Build-and-Operate" ("DBO") contract, there might not be many local companies which had the required operational experience and licences to participate in the tender exercise. Mr CHAN opined that the design, construction and operation of ORRC2 should instead be split into different contracts so that more local companies could take part in the tender exercise, thereby promoting competition. Mr Tommy CHEUNG also had reservations about tendering a DBO contract of ORRC2 and enquired whether the contract would include penalty provisions in case the contractor failed to collect the specified amount of food waste. Mr LUK Chung-hung enquired about the operation period of the ORRC2 contractor under the DBO contract.

41. USEN responded that the Administration had invited over 20 companies to take part in the tender exercise for the ORRC2 contract, and in the end, the tenders submitted by four companies met the eligibility criteria for assessment. Given the various technical and experience requirements involved in the contract, local companies were supposed to collaborate with overseas companies to submit bids. Based on past experience, if separate tender exercises were carried out with different contractors undertaking the design, construction and operation contracts, interface problems might arise. Therefore, the Administration considered it appropriate to take forward large-scale projects, such as ORRC2, under DBO contracts.

42. Dr KWOK Ka-ki opined that the contractor of ORRC1 should not be given preferential treatment in the tender exercise for the ORRC2 contract.

He also enquired whether penalty provisions with deterrent effect would be included in the DBO contract for ORRC2, stipulating that a fine would be imposed or even the contract would be terminated if the performance of the contractor was unsatisfactory, in order to ensure the proper use of public money and the ORRC could reach its designed food waste treatment capacity; if so, the relevant penalties.

43. USEN and ADEP(WIP) advised that the contract required the contractor to undertake the operation of ORRC2 only, but not food waste collection. As such, there would not be any penalty provision in relation to food waste collection in the contract. The Administration would be responsible for food waste collection. At the request of the Chairman and Dr KWOK Ka-ki, the Administration would provide a written response to Dr KWOK's enquiries after the meeting.

(*Post-meeting note:* The Administration's written response was circulated to members vide LC Paper No. PWSC36/18-19(01) on 27 November 2018.)

Impact of the operation of the Organic Resources Recovery Centre on nearby traffic

44. Mr CHAN Hak-kan suggested that, to mitigate the impact of the operation of ORRC2 on nearby traffic, the Administration should implement food waste diversion arrangements, i.e. ORRC1 in Siu Ho Wan on Lantau Island would focus on handling the food waste from the western part of Hong Kong, while ORRC2 in Sha Ling of the North District would treat that from New Territories East. USEN confirmed that C&I food waste diversion arrangements would be put in place when ORRC1 and ORRC2 commenced operation.

45. Mr Holden CHOW relayed the concern of the local community about the impact of the operation of ORRC2 on the overall transport condition in the North District. Given that the commissioning of Lung Shan Tunnel might reduce the traffic volume currently travelling along Sha Tau Kok Road in Fanling to the landfills in the North East New Territories and relieve the traffic pressure in the North District, Mr CHOW enquired whether the completion of Lung Shan Tunnel could tie in with the commissioning of ORRC2. USEN replied that Lung Shan Tunnel was scheduled for commissioning in late 2018 or early 2019, which should tie in with that of ORRC2.

Development of Organic Resources Recovery Centre network

46. Mr CHAN Chi-chuen considered that the Administration should review the effectiveness of the operation of ORRC1 before submitting the funding proposal for ORRC2 for the consideration of the Finance Committee/Public Works Subcommittee. Mr CHAN enquired whether ORRC1 could meet the daily food waste treatment target of around 200 tonnes and the annual compost output target of around 6 500 tonnes since its commissioning in July 2018.

47. Dr Fernando CHEUNG also enquired about the operational details of ORRC1 (including operating costs, traffic impact, treatment capacity of food waste, compost output and electricity generating capacity) since its commissioning, and whether the Administration had learnt from the operational experience of ORRC1 with a view to improving the implementation of ORRC2.

48. ADEP(WIP) pointed out that the operation of ORRC1, which was still in test run, was satisfactory. It treated around 120 tonnes of food waste and produced around 12 tonnes of compost per day on average, and around 25% of its electricity output was exported to the power grids of power companies.

49. Mr Tommy CHEUNG queried why ORRC1 currently treated only 120 tonnes of food waste per day, falling short of the designed treatment capacity of 200 tonnes per day. ADEP(WIP) explained that it took time to culture the anaerobic bacteria required for anaerobic digestion in the food waste treatment process. Moreover, the bacteria could only be cultured with food waste, and the growth and proliferation of methanogens were exceptionally slow. The Administration expected ORRC1 to meet the daily food waste treatment target of around 200 tonnes one year after its commissioning.

50. Mr WU Chi-wai, Mr Tony TSE and Mr HUI Chi-fung enquired about the development timetable of the remaining ORRCs. In addition, Mr WU enquired about the estimated food waste treatment capacity of the whole network. Mr TSE further enquired whether the Administration could expedite the development progress of the whole network and according to its estimation, whether the amount of food waste to be collected would be sufficient to give full play to the total food waste treatment capacity of the network. Mr HUI was concerned that with ORRC3 in Shek Kong scheduled for commissioning in 2026, the whole ORRC network might not be completed until after 2030 in view of the progress made so far. Mr HUI

urged that the Administration should, in parallel, put forward concrete proposals expeditiously for handling domestic food waste.

51. USEN advised that the Administration had commenced a feasibility study and preliminary design for ORRC3. However, he pointed out that identifying suitable sites was one of the biggest challenges for developing the remaining ORRCs. He reiterated that the Administration had spared no effort in enhancing the capability of end-of-pipe treatment of food waste on all fronts. For example, the Administration would implement the aforementioned "Food Waste/Sewage Sludge Anaerobic Co-digestion" Trial Scheme. Should the Trial Scheme be successful, the Administration could start making use of STWs to treat domestic food waste in 2025-2026 at the soonest.

*[At 10:25 am, the Chairman directed that the meeting be extended for 15 minutes to 10:45 am.]*

*[At 10:27 am, Mr Tommy CHEUNG drew the Chairman's attention to the lack of a quorum. The Chairman directed the Clerk to the Subcommittee to summon members by ringing the summoning bell. At 10:29 am, a quorum was present and the meeting resumed.]*

52. The Chairman said that the Subcommittee would continue to discuss this item at the next meeting. The meeting ended at 10:44 am.

Council Business Division 1
Legislative Council Secretariat
24 December 2018