

FURTHER CONSIDERATION OF APPLICATION NO. A/NE-TK/649
UNDER SECTION 16 OF THE TOWN PLANNING ORDINANCE

**Proposed Public Utility Installation (Solar Energy System)
in “Agriculture” Zone**

Lot 646 S.A in D.D. 23, Po Sam Pai Village, Shuen Wan, Tai Po, New Territories

1. Background

- 1.1 The applicant seeks planning permission for the proposed installation of solar energy system on the application site (the Site) (**Plan FA-1**). The Site falls within an area zoned “Agriculture” (“AGR”) on the approved Ting Kok OZP No. S/NE-TK/19. According to the Notes of the OZP, the proposed solar energy system, which is regarded as ‘Public Utility Installation’ use, within the “AGR” zone requires planning permission from the Town Planning Board (the Board).
- 1.2 According to the applicant, two 3m-high steel racks will be erected on the Site above which about 71 solar panels (1m wide x 1.65m long each) will be installed. A battery panel box (1.2m wide x 1.2m long x 2.2m high) will be provided underneath the steel rack near the northern boundary of the Site. The steel racks with solar panels will cover about 63% of the Site, including an existing one-storey domestic structure (60m² in floor area and 2.8m high) and part of an adjoining pond (about 35m²), and the remaining area will be open-air without affecting the existing trees (**Drawings FA-1 and FA-2**). The applicant advises that the proposed solar energy system will be connected to the existing electrical power network of CLP Power Hong Kong Limited (CLP) under the ‘Renewable Energy Feed-in Tariff Scheme’ (FiT Scheme). The amount of electricity expected to be generated is about 56,235.55 kWh per year which will not be consumed by the existing domestic structure on-site but all sold to CLP on commercial basis. No parking and loading/unloading space is proposed.
- 1.3 On 5.7.2019, the Rural and New Town Planning Committee (the Committee) of the Board considered the application. While the Committee appreciated that the purpose of the application was to generate renewable energy, further information was required for Members’ consideration of the application. After deliberation, the Committee decided to defer making a decision on the application pending submission of further information (FI) as follows:
 - (a) the technical feasibility of the installation and maintenance of the proposed solar energy system;
 - (b) shelf life of the solar energy system and the related technology;
 - (c) the proposed arrangement of the proposed solar energy system to the

CLP's grid; and

(d) CLP's view on the proposal.

1.4 In response to the Committee's concern, the applicant submitted the FI at **Appendix FA-4a to FA-4e**. The application is scheduled for consideration by the Committee on 1.11.2019.

2. **The FiT Scheme**

2.1 The FiT Scheme is an initiative introduced by the Government under the post-2018 Scheme of Control Agreements with the two power companies for promoting the development of distributed renewable energy (RE). It aims to encourage the private sector to consider investing in RE as the power generated could be sold to the power companies at a rate higher than the normal electricity tariff to help recover the costs of investment in the RE systems and generation.

2.2 Any non-governmental bodies or individuals, who as customers of the relevant power company plan to install distributed RE systems at their premises in the respective power company's supply area, are eligible for prescribed FiT rates from that power company as long as they have been connected to the latter's grid. To join the Scheme, an applicant may make submission direct to the relevant power company with the required documents including the preliminary layout diagram and other information of the proposed RE system. After meeting the requirements specified by the power company on technical assessment, system test and installation works, the power company will proceed to installing a smart meter in the applicant's premises to facilitate connecting the proposed RE system to the power grid. The successful applicant would be offered the FiT rate throughout the project life of the RE system until end 2033. The applicant shall ensure the design, installation, operation and maintenance of the RE system comply with the applicable laws, guidelines, and safety and technical guidelines.

3. **Further Information submitted by the Applicant**

The applicant's responses to Members' concerns as provided in his FI are summarized below:

Technical feasibility of the installation and maintenance of the proposed solar energy system

3.1 To ensure that installation of the supporting structures for the proposed solar panel system is technically feasible, the applicant commits to appoint a building professional to submit building plans to the Buildings Department (BD) for approval. The building works would only commence upon the approval by BD.

3.2 For the maintenance of the proposed solar energy system, the applicant indicates that solar panels installed at the 3m-high steel racks would not easily be damaged. Depending on the amount of dust in the area, cleansing of the solar panel system would be done annually and also by rainfall throughout the year. There is a space of about 400mm reserved between solar panels and the steel

racks to facilitate cleansing works. Maintenance of the battery panel box of the solar panel system is also easy as it will be installed on the ground floor and protected from strong sunlight and high temperature which may affect its operation.

Shelf life of the solar energy system and the related technology

- 3.3 According to the information from most countries, the shelf life of solar panels could range from 25 to 40 years. The effectiveness of solar panels would depreciate by 10% in first 12 years and by 20% in the subsequent 20 to 40 years. The technology of solar energy system is very mature. There are a lot of solar panels installed in various countries, including China, Japan, Germany, USA, etc.

Proposed arrangement of the proposed solar energy system to the CLP's grid

- 3.4 The applicant has made an application to CLP for joining the FiT Scheme. Before CLP agrees with the application, the applicant would need to upgrade the electricity installation at the Site and fulfil the technical requirements and conditions as specified by CLP (detailed in CLP's letter dated 20.9.2019 in **Appendix FA-4d**). Upon the applicant's fulfilment of the requirements and conditions, CLP will carry out the necessary work to afford the upgraded electricity installation at the Site. It would also consider issuing an RE FiT rate to the applicant. The applicant would then proceed to building the proposed solar panel system for connection to the power grid.

CLP's view on the proposal

- 3.5 The applicant claims that his proposal is supported by CLP through their positive response to his FiT application. According to CLP's letter dated 20.9.2019 (**Appendix FA-4d**), CLP will carry out all necessary work to afford the upgraded electricity installation at the Site to accommodate the proposed solar energy system, subject to the applicant's fulfilment of relevant technical requirements and conditions.

Other responses and requests

- 3.6 The applicant claims that the works cost for upgrading the electricity installations at the Site and installation of the proposed solar energy system would be about \$60,000 and \$1,200,000 respectively. The estimated payback period would be about 8 to 10 years. In light of the long payback period, the applicant requests the Board to grant a planning approval on a permanent term, or for a temporary period of at least 10 years or tallying with the FiT Scheme which will last for 15 years ending by 2033.
- 3.7 The applicant also requests the Board to approve the planning application before he proceeds to the upgrading and installation works and secures the connection to CLP's grid so as to avoid abortive works and waste of money.

4. **Comments from Relevant Government Department**

4.1 The views of relevant Government departments on the FI are as follows:

Building Matters

4.1.1 Comments of the Chief Building Surveyor/New Territories West, Buildings Department (CBS/NTW, BD):

the supporting structures for the solar panels will exceed the requirements of the items in Minor Works Control System. The applicant shall consult building professionals for advice and submit building plans to BD for prior approval and consent from the Building Authority. The applicant should also note the advisory comments related to the Buildings Ordinance as set out at Appendix II of the RNTPC Paper No. A/NE-TK/649C at **Appendix FA-1**.

Electricity Supply

4.1.2 Comments of the Director of Electrical and Mechanical Services (DEMS):

he has no comment on the FI submitted by the applicant from regulatory services perspective. For the FiT scheme, the scheme is mainly administered by the power company (i.e. CLP in this application) in accordance with the agreement with the Government. The Electrical and Mechanical Services Department (EMSD) is not involved in the case-by-case administration of the scheme.

5. **Planning Considerations and Assessments**

5.1 The applicant has submitted FI to address the Committee's concerns as set out in paragraph 1.3 above. To ensure technical feasibility for installation of the supporting structures for the proposed solar energy system, the applicant commits that a building professional would be appointed to submit building plans to BD for approval. The building works would only commence upon the approval by BD. Regarding the maintenance aspect, the applicant states that solar panels installed at the 3m-high steel racks would not easily be damaged. Depending on the amount of dust in the area, cleansing of the solar panel system would be done annually and also by rainfall throughout the year. There is a space of about 400mm reserved between solar panels and the steel racks to facilitate cleansing works. Maintenance of the battery panel box of the solar panel system is also easy as it is installed on the ground floor and is protected from strong sunlight and high temperature which may affect its operation. DEMS advises that he has no comment on FI submitted by the applicant from regulatory services perspective.

5.2 With respect of the shelf life of the solar energy system and the related technology, the applicant states that according to the information from most countries, the shelf life of solar panels could range from 25 to 40 years. The effectiveness of solar panels would depreciate by 10% in first 12 years and by 20% in the subsequent 20 to 40 years. The technology of solar energy system

is very mature. There are a lot of solar panels installed in various countries, including China, Japan, Germany, USA, etc.

- 5.3 Regarding the proposed arrangement of connecting the proposed solar energy system to the CLP's grid, the applicant has made an application to the CLP for joining the FiT Scheme. Before CLP agrees with the application, the applicant would need to upgrade the electricity installation at the Site and fulfil the technical requirements and conditions as specified by CLP. Upon the applicant's fulfilment of the requirements and conditions, CLP will carry out the necessary work to afford the upgraded electricity installation at the Site. It would also consider issuing an RE FiT rate to the applicant. The applicant also commits to appoint a building professional to submit building plans to BD for approval prior to commencement of the building works. Upon the Building Authority's approval, the applicant could proceed to building the proposed solar panel system for connection to the power grid.
- 5.4 Regarding CLP's view on the proposal, the applicant claims that his proposal is supported by CLP through their positive response to his FiT application. A letter dated 20.9.2019 from CLP (**Appendix FA-4d**) has been received by him indicating that CLP will carry out all necessary work to afford the upgraded electricity installation at the Site to accommodate the proposed solar energy system, subject to the applicant's fulfilment of relevant technical requirements and conditions. As advised by EMSD, for the FiT scheme, the scheme is mainly administered by the power company (i.e. CLP in this application) in accordance with the agreement with the Government.
- 5.5 Apart from the responses to the Committee's concerns, the applicant claims that the works cost for upgrading the electricity installations in the Site and installation of the proposed solar energy system would be about \$60,000 and \$1,200,000 respectively. The estimated payback period would be about 8 to 10 years. In light of the long payback period, the applicant requests the Board to grant a planning approval on a permanent basis, or for a temporary period of at least 10 years or tallying with the FiT Scheme which will last for 15 years from 2018. In addition, the applicant requests the Board to approve the planning application before he proceeds to the upgrading and installation works and secure the connection with CLP's grid so as to avoid abortive works and waste of money. While the applicant does not provide details for calculation of the payback period, the estimated period of 8 to 10 years falls within the effective period of the FiT Scheme, i.e. 15 years from 2018 until 2033.
- 5.6 Other planning considerations and assessments on the application are set out in paragraph 10 of RNTPC Paper No. A/NE-TK/649C at **Appendix FA-1**. The main points are summarised as follows:
- (a) the proposed development, which falls within an area zoned "AGR", is not entirely in line with the planning intention of the "AGR" zone which is primarily to retain and safeguard good quality agricultural land/farm/fish ponds for agricultural purposes. It is also intended to retain fallow arable land with good potential for rehabilitation for cultivation and other agricultural purposes. Whilst the Director of Agriculture, Fisheries and Conservation does not support the application since the Site possesses potential for agricultural rehabilitation, his

department will not impose any restrictions on the installation of solar panels on agricultural land. From agricultural development point of view, the Site can be used for agricultural activities such as open-field cultivation, greenhouses, plant nurseries, etc. It is up to the applicant to decide how the agricultural land covered by the solar panels can still be used for agricultural use;

- (b) according to the applicant, the amount of electricity expected to be generated by the proposed solar energy system is about 56,235 kWh per year which will all be sold to CLP under the FiT Scheme. The Secretary for the Environment supports the development of RE and encourages the community to develop distributed RE. The Director of Environmental Protection has no objection to the application and advises the applicant to strictly comply with relevant pollution control ordinances and to implement appropriate pollution control measures to minimize any potential environmental impacts during construction. DEMS has no objection to the application and advises that all fixed electrical installations of the solar energy system shall comply with the Electricity Ordinance (Cap. 406) and its subsidiary regulations;
- (c) the Site is flat and comprises a temporary one-storey domestic structure, a mud track, part of a pond and some fruit trees. The surrounding areas are predominantly rural in character with active or fallow agricultural land and scattered tree groups. Village houses are concentrated within "Village Type Development" zones to the further south and northeast of the Site. According to the applicant, the proposed 3m-high steel racks split into two parts, will minimise impact on the growth of existing trees. The Chief Town Planner/Urban Design and Landscape, Planning Department has no objection to the application from landscape planning perspective as adequate clearance will be provided between the two steel racks to facilitate healthy growth of existing trees, and adverse impact on the existing trees is not anticipated; and
- (d) the Chief Engineer/Mainland North, Drainage Services Department advises that if the application is approved by the Board, approval condition for the submission and implementation of stormwater drainage and site formation proposals to the satisfaction of the Director of Drainage Services or of the Board should be imposed to ensure that it will not cause adverse drainage impact to the adjacent areas. Besides, CBS/NTW of BD advises that the supporting structures for the solar panels will exceed the requirements of the Minor Works Control System and the applicant shall consult building professionals for advice and submit building plans to BD for prior approval and consent from the Building Authority. Other Government departments consulted, including the Commissioner for Transport, Project Manager/North and Head of Geotechnical Engineering Office of Civil Engineering and Development Department, Chief Highway Engineer/New Territories East of Highways Department, District Officer/Tai Po of Home Affairs Department, Chief Engineer/Construction of Water Supplies Department, Director of Fire Services and Director of Health have no objection to or no adverse comment on the application.

- 5.7 The proposed solar energy system is not entirely in line with the planning intention of the “AGR” zone and it is uncertain whether the FiT Scheme will continue beyond 2033. Having regard to the estimated payback period for the system and the effective period of the FiT Scheme, it is considered reasonable and cautious to grant an approval period of 10 years, which is one of the suggestions offered by the applicant.

6. Planning Department’s Views

- 6.1 The Planning Department maintains its view of having no objection to the application for the considerations as detailed in paragraph 5 above.
- 6.2 Should the Committee decide to approve the application, it is suggested that the permission shall be valid on a temporary basis for a period of ten years until 1.11.2029. The following conditions of approval and advisory clauses are suggested for Members’ reference:

Approval Conditions

- (a) the submission and implementation of stormwater drainage and site formation proposals to the satisfaction of the Director of Drainage Services or of the Town Planning Board; and
- (b) the provision of fire service installations and water supplies for firefighting to the satisfaction of the Director of Fire Services or of the Town Planning Board.

The recommended advisory clauses are at **Appendix FA-5**.

- 6.3 Alternatively, should the Committee decide to reject the application, the following reason for rejection is suggested for Members’ consideration:
- the proposed development is not in line with the planning intention of the “AGR” zone which is primarily to retain and safeguard good quality agricultural land/farm/fish ponds for agricultural purposes. It is also intended to retain fallow arable land with good potential for rehabilitation for cultivation and other agricultural purposes. There is no strong planning justification in the submission for a departure from the planning intention.

7. Decision Sought

- 7.1 The Committee is invited to consider the application and decide whether to grant or refuse to grant the permission.
- 7.2 Should the Committee decide to approve the application, Members are invited to consider the approval condition(s) and advisory clause(s), if any, to be attached to the permission, and the date when the validity of the permission should expire.

7.3 Alternatively, should the Committee decide to reject the application, Members are invited to advise what reason(s) for the rejection should be given to the applicant.

8. Attachments

Appendix FA-1	RNTPC Paper No. A/NE-TK/649C
Appendix FA-2	Extract of minutes of the RNTPC Meeting held on 5.7.2019
Appendix FA-3	Secretary of the Board's letter dated 19.7.2019
Appendix FA-4a	Further information submitted by the applicant dated 9.9.2019
Appendix FA-4b	Further information submitted by the applicant dated 10.9.2019
Appendix FA-4c	Further information submitted by the applicant dated 13.9.2019
Appendix FA-4d	Further information submitted by the applicant dated 3.10.2019
Appendix FA-4e	Further information submitted by the applicant dated 17.10.2019
Appendix FA-5	Recommended advisory clauses
Drawings FA-1 and FA-2	Drawings submitted by the applicant
Plan FA-1	Location Plan
Plan FA-2	Site Plan
Plan FA-3	Aerial Photo
Plans FA-4a to FA- 4b	Site Photos

**PLANNING DEPARTMENT
NOVEMBER 2019**