

CONTROLLING OFFICER'S REPLY**EEB(E)020****(Question Serial No. 2089)**

Head: (42) Electrical and Mechanical Services Department

Subhead (No. & title): Not specified

Programme: (3) Energy Efficiency and Conservation, and Alternative Energy

Controlling Officer: Director of Electrical and Mechanical Services (POON Kwok-ying)

Director of Bureau: Secretary for Environment and Ecology

Question:

- 1) With regard to the renewable energy (RE) projects implemented for government departments and public organisations, please provide information in the following format:

Year	Name of government departments/ public organisations	Buildings/ facilities involved	Actual electricity generation	Amount of electricity tariff saved	Reduction of energy consumption in indoor environment	Repair and maintenance costs
2023						
2022						
2021						

- 2) With regard to the Pilot Scheme on Building-Integrated Photovoltaics (BIPV) (Pilot Scheme) launched at the Electrical and Mechanical Services Department Headquarters, what are the current progress and implementation timetable? What mechanism is in place to assess the effectiveness and feasibility of BIPV?
- 3) In the past 3 years (2021-22 to 2023-24), what measures have been introduced to support the use of RE by public and private organisations? Please set out the manpower and actual expenditure involved in each measure.
- 4) In 2024-25, what are the plans of the Government for continuing to support the use of RE by public and private organisations? Please set out the manpower and estimated expenditure involved in each plan.

Asked by: Hon KAN Wai-mun, Carmen (LegCo internal reference no.:10)

Reply:

- (1), (3) and (4) The Government has earmarked a total of \$3 billion to install renewable energy (RE) facilities at government buildings and infrastructures since

2017-18. As at December 2023, about \$2 billion have been approved for 226 projects, including the installation of solar energy generation systems at government offices, government quarters, schools, recreational grounds-cum-rest gardens, reservoirs, pedestrian links, etc. as well as the installation of waste-to-energy and hydropower systems at multiple sewage treatment plants. 143 of 226 approved projects have been completed, and the rest of them will commence works as scheduled next year. We expect that these projects can generate a total of about 25 million kilowatt-hours (kWh) of electricity annually. The RE projects newly installed in government buildings and infrastructures supported by the above funding in the past 3 years are tabulated below:

	Government departments	Buildings/Infrastructures	Estimated annual power generation efficiency (kWh)
2023			
1	Hong Kong Police Force	Lantau North Divisional Police Station	18 480
2	Government Property Agency	North District Government Offices	25 675
3	Hong Kong Police Force	Police Tactical Unit Headquarters	9 750
4	Food and Environmental Hygiene Department	Food and Environmental Hygiene Department - Tai Po Depot	24 700
5	Government Property Agency	Tai Po Government Offices	33 150
6	Marine Department	Western District Public Cargo Working Area	6 160
7	Food and Environmental Hygiene Department	Wo Hop Shek Crematorium & Columbarium	22 750
8	Leisure and Cultural Services Department	Causeway Bay Sports Ground	650
9	Leisure and Cultural Services Department	Central and Western District Promenade – Sheung Wan Section	925
10	Leisure and Cultural Services Department	Hong Kong Park Children’s Playground	1 200
11	Government Property Agency	30 Plunkett’s Road	375
12	Leisure and Cultural Services Department	Fanling Hong Lok Park	250
13	Food and Environmental Hygiene Department	Fanling Wai North Refuse Collection Point (N-31)	12
14	Correctional Services Department	Lai King Correctional Institution	1 050

	Government departments	Buildings/Infrastructures	Estimated annual power generation efficiency (kWh)
15	Leisure and Cultural Services Department	Jockey Club Tak Wah Park	6 480
16	Leisure and Cultural Services Department	Jordan Valley Park	810
17	Leisure and Cultural Services Department	King's Road Playground	625
18	Government Property Agency	Kowloon East Government Offices	3 600
19	Leisure and Cultural Services Department	Kwok Shui Road Park	2 440
20	Leisure and Cultural Services Department	Morse Park (Park No. 4)	9 880
21	Leisure and Cultural Services Department	North District Park	1 140
22	Leisure and Cultural Services Department	Po Hong Park	3 200
23	Food and Environmental Hygiene Department	Kwu Tung Tung Fong Farm Refuse Collection Point (N-24)	12
24	Leisure and Cultural Services Department	Sai Wan Ho Playground	900
25	Food and Environmental Hygiene Department	San Tong Village	8
26	Leisure and Cultural Services Department	Sha Tau Kok Children's Playground	1 175
27	Leisure and Cultural Services Department	Sha Tau Kok Promenade Sitting-out Area	1 750
28	Leisure and Cultural Services Department	Sha Tau Kok Recreation Ground	360
29	Leisure and Cultural Services Department	Shek Wu Hui Jockey Club Playground	400
30	Government Property Agency	Shun Lee Disciplined Services Quarters	1 075
31	Leisure and Cultural Services Department	Sok Kwu Wan Playground	350
32	Leisure and Cultural Services Department	Shing Mun Valley Park (South Garden)	4 920
33	Leisure and Cultural Services Department	Tin Sau Road Park	420
34	Leisure and Cultural Services Department	Tin Yip Road Park	640
35	Leisure and Cultural Services Department	Tunnel Approach Rest Garden	180

	Government departments	Buildings/Infrastructures	Estimated annual power generation efficiency (kWh)
36	Food and Environmental Hygiene Department	Wai Tau Village Refuse Collection Point (TP51)	8
37	Leisure and Cultural Services Department	Yee Shing Lane Temporary Sitting Out Area	600
38	Leisure and Cultural Services Department	Yuen Shin Park	150
39	Leisure and Cultural Services Department	Yung Shue Wan Playground	600
40	Leisure and Cultural Services Department	Po Wing Road Sports Centre	210
41	Leisure and Cultural Services Department	Kowloon Park	3 406
42	Leisure and Cultural Services Department	Lei King Wan Sitting-out Area	500
43	Leisure and Cultural Services Department	Ma Ling Path Rest Garden	275
44	Leisure and Cultural Services Department	Ngau Chi Wan Park	2 125
45	Leisure and Cultural Services Department	On Luk Street Park	3 075
46	Leisure and Cultural Services Department	Tin Shui Wai Cycling Entry/Exit Hub	1 380
47	Leisure and Cultural Services Department	Tsing Yi Sports Ground	480
48	Leisure and Cultural Services Department	Wan Chai Park	1 320
2022			
49	Education Bureau	Jockey Club Government Secondary School	39 000
50	Education Bureau	Kowloon Tong Government Primary School	18 850
51	Government Property Agency	Mui Wo Government Offices	21 175
52	Correctional Services Department	Shek Pik Prison	100 100
53	Hong Kong Police Force	Border District Police Headquarters	19 500
54	Civil Aid Service	Civil Aid Service Headquarters	8 160
55	Home Affairs Department	Kowloon City Government Offices	6 500
56	Hong Kong Police Force	Lantau South Divisional (Mui Wo) Police Station	5 775

	Government departments	Buildings/Infrastructures	Estimated annual power generation efficiency (kWh)
57	Hong Kong Police Force	Stanley Sub-divisional Police Station	11 600
58	Transport Department	Yung Shue Wan Pier	9 240
59	Leisure and Cultural Services Department	Central and Western District Promenade - Central Section	2 240
60	Leisure and Cultural Services Department	Fuk Man Garden	700
61	Independent Commission Against Corruption	Independent Commission Against Corruption Headquarters Building	1 803
62	Leisure and Cultural Services Department	Kowloon Bay Sports Ground	9 100
63	Leisure and Cultural Services Department	Kwai Shing Circuit Garden	1 650
64	Correctional Services Department	Lo Wu Correctional Institution	630
65	Hong Kong Police Force	Marine Police East Divisional Police Station	26 250
66	Leisure and Cultural Services Department	Po Kong Village Road Park	14 915
67	Marine Department	Stonecutters Island Public Cargo Working Area	9 100
68	Agriculture, Fisheries and Conservation Department	Tai Mo Shan Country Park Visitor Centre	210
69	Leisure and Cultural Services Department	Cheung Chau Sports Centre	600
70	Leisure and Cultural Services Department	Ngan Shing Street Garden	350
71	Leisure and Cultural Services Department	Peng Chau Waterfront Playground	1 440
72	Leisure and Cultural Services Department	Tai Po Waterfront Park	2 100
73	Drainage Services Department	Stonecutters Island Sewage Treatment Works	120 000
2021			
74	Agriculture, Fisheries and Conservation Department	Aberdeen Tree Centre	4 000
75	Leisure and Cultural Services Department	Chai Wan Park	700
76	Hong Kong Observatory	Cheung Chau Aeronautical Meteorological Station	3 600

	Government departments	Buildings/Infrastructures	Estimated annual power generation efficiency (kWh)
77	Leisure and Cultural Services Department	Cheung Chau Park	700
78	Hong Kong Police Force	Hong Kong Auxiliary Police Force Headquarters	23 100
79	Education Bureau	Kowloon Technical School	9 240
80	Government Property Agency	Mongkok Government Offices	10 780
81	Agriculture, Fisheries and Conservation Department	Western Wholesale Food Market	77 000
82	Education Bureau	New Territories Heung Yee Kuk Yuen Long District Secondary School	31 200
83	Correctional Services Department	Pak Sha Wan Correctional Institution	9 240
84	Education Bureau	Queen Elizabeth School	6 930
85	Leisure and Cultural Services Department	Sai Kung Outdoor Recreation Centre	9 000
86	Education Bureau	Sha Tin Government Secondary School	18 480
87	Education Bureau	Tsuen Wan Government Secondary School	7 800
88	Leisure and Cultural Services Department	Tsuen Wan Park	420
89	Government Property Agency	Tuen Mun Government Offices	61 000
90	Education Bureau	Tuen Mun Government Primary School	17 000
91	Department of Health	Fanling Health Centre	9 750
92	Correctional Services Department	Block M, Hei Ling Chau Addiction Treatment Centre	6 930
93	Correctional Services Department	Block N, Hei Ling Chau Addiction Treatment Centre	7 700
94	Leisure and Cultural Services Department	Ngau Chi Wan Civic Centre	300
95	Home Affairs Department	Sai Kung Jockey Club Town Hall	500
96	Hong Kong Police Force	Sha Tin Divisional Police Station	9 240
97	Education Bureau	Shau Kei Wan Government Secondary School	8 250
98	Education Bureau	Tseung Kwan O Government Secondary School	9 900

	Government departments	Buildings/Infrastructures	Estimated annual power generation efficiency (kWh)
99	Highways Department	Tunnel KS57; across Cherry Street, near Oak Street	20 000
100	Water Supplies Department	Silvermine Bay Treatment Works	70 000
101	Drainage Services Department	Tai Po Sewage Treatment Works	573 000
102	Drainage Services Department	Sha Tin Sewage Treatment Works	3 500 000

Note :

The above RE projects include solar panels, solar lamp posts, hydropower, biogas and biomass energy projects.

The management, operation, repair, maintenance, etc. of the above solar energy generation system projects are undertaken by individual departments. The Electrical and Mechanical Services Department (EMSD) has not kept information on the actual electricity generation, amount of electricity tariff saved, performance of energy reduction in indoor environment, as well as repair and maintenance costs.

The new solar photovoltaic system projects for government buildings and facilities expected to be supported by the above funding in 2024 and 2025 are tabulated below:

	Buildings/Infrastructures	Estimated annual power generation (kWh)
1	South East New Territories Landfill / Tseung Kwan O Preliminary Treatment Works	1 000 000
2	Sai Kung Market	107 000
3	Food and Environmental Hygiene Department Kwai Chung Depot	89 000
4	Diamond Hill Crematorium	85 000
5	Kwai Chung Industrial Sewage Pumping Station	70 000
6	Sunny Bay Sewage Pumping Station	50 000
7	Penny's Bay Sewage Pumping Station	50 000
8	Tin Shui Wai Tin Wah Road Sewage Pumping Station	50 000
9	Tsing Yi Swimming Pool	31 000
10	Ho Man Tin Government Offices	13 000
11	To Kwa Wan Market and Government Offices	12 000

The Government has also endeavoured to create favourable conditions that are conducive to encouraging the private sector to develop RE on its land and properties. To couple with the Feed-in Tariff (FiT) Scheme, the EMSD has launched a series of support measures, such as implementing Solar Harvest to install photovoltaic systems for eligible schools and welfare non-governmental organisations (NGOs) free of charge. About 500 photovoltaic systems were installed at participating schools and welfare NGOs under Solar Harvest over the past 3 years. It is estimated that the systems can generate about 4.5 million kWh of electricity each year, equivalent to the annual electricity consumption of about 1 360 families.

The Environment and Ecology Bureau also continues the collaboration with the EMSD to regularly organise activities such as seminars and briefings etc. to introduce RE facilities and the FiT Scheme to relevant stakeholders, so as to encourage different sectors to make optimum use of their premises for the development of RE. Over the past 3 years, the EMSD organised and participated in nearly 80 public and industry briefings / seminars with about 10 000 participants in total.

Despite the cessation of Solar Harvest at the end of March 2024, the EMSD will continue to promote the above measures in 2024-25. The above measures will be implemented by relevant departments such as the EMSD etc. with their existing staff establishment.

- (2) Through multi-disciplinary and inter-departmental collaboration (including the EMSD, Buildings Department, Architectural Services Department and Fire Services Department), the Government will launch the Pilot Scheme on Building-Integrated Photovoltaics (BIPV) (Pilot Scheme) at the EMSD Headquarters to explore photovoltaic technology applications on the facades of the buildings as well as the supply of RE to buildings. The project is currently under planning. We will announce the details in due course.

To formulate an appropriate proposal for the Pilot Scheme, the inter-departmental team will comprehensively take into consideration various factors of the existing EMSD Headquarters, including structural compatibility, appearance, insolation conditions at different facades of the building, operational situations, as well as repair and maintenance requirements, etc.

Apart from supplying RE to the building, the Pilot Scheme can provide actual data for reference and evaluation. Based on the relevant data collected, the Government will assess the effectiveness and feasibility of BIPV from various aspects, such as the actual power generation efficiency, performance in reducing indoor energy consumption as well as repair and maintenance requirements and expenditures, etc., so as to evaluate whether to extend the Pilot Scheme to other public and private organisations in the future.