

CONTROLLING OFFICER'S REPLY

(Question Serial No. 4098)

Head: (42) Electrical and Mechanical Services Department
Subhead (No. & title): (000) Operational Expenses
Programme: (3) Energy Efficiency and Conservation, and Alternative Energy
Controlling Officer: Director of Electrical and Mechanical Services (Alfred W H SIT)
Director of Bureau: Secretary for the Environment

Question:

It is estimated that the Electrical and Mechanical Services Department will complete 3 studies in relation to the “research and development on the application of innovative energy efficiency technologies”, which is the same as the number of studies in 2017 and 2018. Please:

1. list the topics and areas of the studies in 2017 and 2018 as well as the expenditure involved; and
2. list the topics and areas of the proposed studies in 2019 as well as the estimated expenditure.

Asked by: Hon YEUNG Alvin (LegCo internal reference no.: 38)

Reply:

The expenditure involved in the applied research studies on innovative energy efficiency and renewable energy technologies completed in 2017-18 and 2018-19 (3 studies each year) was about \$0.3 million and \$1.1 million respectively, while the estimated expenditure on the 3 studies to be carried out in 2019-20 is about \$2.1 million. The expenditure on each study depends on the nature of the technology concerned and the actual research works required.

The studies in 2017-18 included (i) applicability of cogeneration and trigeneration in Hong Kong; (ii) energy efficiency of variable-speed window-type room air conditioners; and (iii) energy efficiency and reliability of passive drivers for light-emitting diode (LED) lighting.

The studies in 2018-19 included (i) actual performance of electricity generation of photovoltaic panels in the local environment (including different orientations and tilt angles); (ii) energy efficiency and reliability of graphene LED lighting; and (iii) energy efficiency and reliability of permanent-magnet synchronous motors used in fan coil units of air-conditioning systems.

The studies to be carried out in 2019-20 include (i) energy efficiency and reliability of immersion cooling technology used in servers of data centres; (ii) thermal insulation performance of innovative solar control window films; and (iii) electricity generation performance and reliability of hybrid wind-solar power generators.