

*Energy efficiency and conservation in government buildings*

---

---

The Audit Commission ("Audit") conducted a review to examine the work of the Environment Bureau ("ENB"), the Electrical and Mechanical Services Department ("EMSD") and the Architectural Services Department ("ArchSD") for energy efficiency and conservation in government buildings. A related review was conducted in October 2008.<sup>1</sup>

2. The Government has set four rounds of electricity saving targets for government buildings for the period from 2003-2004 to 2019-2020 and achieved them through measures including conducting energy audits for 344 government buildings and implementing energy saving projects with funding of some \$900 million. The Government has further set a new green energy target (covering new areas including government infrastructures and other forms of energy) for the five-year period from 2020-2021 to 2024-2025.

3. ENB is responsible for energy efficiency and conservation policy, including setting the Government's energy saving targets, formulating strategies for achieving the targets and monitoring the implementation progress. EMSD is mainly responsible for monitoring the progress in achieving the energy saving targets, coordinating and overseeing the conduct of energy audits<sup>2</sup> and retro-commissioning ("RCx")<sup>3</sup> for selected government buildings, and administering the funding applications of energy saving projects in government buildings under a block vote of the General Revenue Account ("EMSD Block Vote"). ArchSD is mainly responsible for administering a block vote for minor building works of the Capital Works Reserve Fund ("ArchSD Block Vote"), implementing energy saving projects in government buildings which involve building works and monitoring the implementation progress of such projects.

4. The Committee noted the following findings from the Director of Audit's Report:

---

<sup>1</sup> Chapter 5 of Director of Audit's Report No. 51 – "Government electricity consumption".

<sup>2</sup> Energy audit is a systematic review of the energy consuming equipment/systems in a building to identify energy management opportunities. A total of 251 government buildings were shortlisted for conducting energy audits between 2020-2021 and 2022-2023 to identify energy management opportunities for achieving the green energy target.

<sup>3</sup> RCx is a systematic and cost-effective process to periodically check an existing building's energy and other performances to identify energy saving opportunities. In 2018, EMSD identified 280 government buildings and invited the pertinent bureaux/departments ("B/Ds") to conduct RCx for the government buildings under their management through a seven-year RCx programme from 2019-2020 to 2025-2026.

Achievement of energy saving targets

- long time was taken by EMSD to compile (including collecting returns from bureaux/departments ("B/Ds")) and submit annual reports on achievement of electricity saving target to ENB for each year from 2015-2016 to 2018-2019, ranging from 11 to 13 months after the respective financial year end. EMSD had not made use of any information technology system with programming functions for importing and collating data from B/Ds for generation of management reports;
- Audit examined the 2018-2019 normalization calculations of 15 government venues checked by EMSD and with comments on the calculations provided to the B/Ds concerned. Audit noted that, for 4 out of the 15 government venues, there might be scope for EMSD to seek further clarifications on the effect of activity changes on normalization calculations from the B/Ds concerned;
- there were no detailed guidelines on the procedures for checking normalization calculations submitted by B/Ds. In addition, regular management information for checking results of normalization calculations had not been compiled by EMSD;
- there was a need for ENB and EMSD to keep under review the implementation of measures to achieve the new green energy target<sup>4</sup> and provide necessary assistance to help B/Ds achieve the target;
- the progress of 9 of the 39 renewable energy projects<sup>5</sup> (at planning or construction stages) was about three to five months later than their original completion dates. As of June 2020, ArchSD was conducting feasibility study for 14 project proposals, which had been submitted by B/Ds to ArchSD before August 2018;

---

<sup>4</sup> The 2019 Policy Address announced a green energy target of 6% improvement in energy performance for the five-year period from 2020-2021 to 2024-2025 under comparable operating conditions in 2018-2019 as the baseline.

<sup>5</sup> From 2017-2018 to 2019-2020, a total of \$2 billion had been earmarked for installation of small-scale renewable energy systems at existing government buildings and infrastructures. As of June 2020, 67 projects had been approved for implementation, of which 28 projects had been completed and 39 projects were at planning or construction stages.

*Energy efficiency and conservation in government buildings*

---

Management of energy audits and RCx for government buildings

- five government buildings fulfilling the selection criterion for conducting energy audits (for identifying energy management opportunities) between 2020-2021 and 2022-2023 were not shortlisted;
- B/Ds were responsible for identifying and prioritizing the recommendations for energy management opportunities in the energy audit reports for implementation as far as practicable. However, there was no requirement for B/Ds to provide information to EMSD on the implementation progress;
- among the 230 government buildings included in EMSD's programme for conducting RCx (for identifying energy saving opportunities) from 2019-2020 to 2025-2026, as of September 2020, RCx study for only 44 (19%) buildings had commenced and a tentative timetable for the remaining 186 (81%) buildings had been prepared. EMSD needed to keep under review the RCx implementation timetable for government buildings included in the RCx programme and confirm the implementation schedule with the B/Ds concerned as early as possible;
- there were 50 government buildings where the pertinent B/Ds had not yet decided whether they would be included in the RCx programme;

Management of energy saving projects and other management issues

- funding of about \$700 million had been earmarked under EMSD Block Vote for the gradual implementation of energy saving projects in government buildings from 2017-2018 to 2021-2022. Regarding the 267 energy saving projects funded under EMSD Block Vote, as of March 2020:
  - (a) 174 (65%) projects had been completed and 93 (35%) projects were in progress. For the 174 completed projects, performance measurements for 38 (22%) projects were still in progress. For the 93 projects in progress, 18 (19%) projects were behind schedule; and
  - (b) 121 (45%) projects had changes in approved project estimate ("APE"), with 47 projects having an increase in APE (averaging 48%) and 74 projects having a decrease in APE (averaging 41%);

*Energy efficiency and conservation in government buildings*

---

- funding of about \$200 million had also been earmarked under ArchSD Block Vote for the gradual implementation of energy saving projects in government buildings from 2017-2018 to 2021-2022. Regarding the 204 energy saving projects funded under ArchSD Block Vote, as of March 2020:
  - (a) 58 (28%) projects had not incurred any expenditure in the year of approval. Out of these 58 projects, 17 (29%) projects had not incurred any expenditure in the subsequent year after the year of approval; and
  - (b) based on the checking of 13 completed projects, the total actual expenditure of four projects (with a total APE of \$14.9 million) was \$8.1 million (54%) less than the total APE. As of March 2020, these projects were still at account finalization stage and the funding of \$8.1 million was still being tied up; and
- from January 2015 to July 2020, ArchSD had completed 34 government building projects for which the green building certification requirement<sup>6</sup> was applicable. As of July 2020, 15 (44%) out of the 34 projects had not yet obtained final green building certification.

5. The Committee did not hold any public hearing on this subject. Instead, it asked for written responses regarding the achievement of energy saving targets, management of energy audits and RCx for government buildings, and management of energy saving projects. The consolidated replies from **Secretary for Environment, Director of Electrical and Mechanical Services** and **Director of Architectural Services** are in *Appendix 7*.

6. The Committee wishes to be kept informed of the progress made in implementing the various recommendations made by Audit.

---

<sup>6</sup> The Building Environmental Assessment Method Plus is a comprehensive assessment tool to certify green buildings in Hong Kong. All new government buildings of construction floor area above 5 000 square metres with central air conditioning or above 10 000 square metres should aim to obtain the second highest grade or above under this assessment mechanism.