

ADVISORY COUNCIL ON THE ENVIRONMENT

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for information

Energy Efficiency and Conservation

I. Purpose

This paper briefs members on our current energy efficiency and conservation (EEC) policy and programmes.

II. Existing Policy

2. Our existing policy on EEC is to promote the concept as far as possible without impeding economic growth and having regard to public expectations about improvements in the standard of living. It involves the following specific elements:

- (a) promoting public awareness through educational and publicity programmes carrying the message that savings can be achieved without cutting back the level of production or services attained;
- (b) providing information and advice on how to achieve EEC; and
- (c) establishing and enforcing energy efficiency standards relating to building and building services design.

III. Recommended Programmes

3. In April 1991, we set up the Energy Efficiency Advisory Committee (EEAC) under the chairmanship of the Secretary for Planning, Environment and Lands to consider proposals to improve energy efficiency and to advise Government on them, having regard to their likely effectiveness and economic impact. Subsequently, the EEAC recommended that the following programmes be pursued in the short and long run:

- (a) An education campaign on EEC should be undertaken in phases over the next few years, with an initial phase aimed at educating the public on the concept of energy efficiency and its implications for the environment, and with subsequent phases targeted at specific target uses.

- (b) A series of advisory notes on good energy housekeeping should be published. Of these, the Advisory Note on Energy Efficiency in Existing Commercial Buildings in Hong Kong should be the first to be published in an attractive and bilingual format and distributed free of charge to all building managers to enhance their awareness of good housekeeping and maintenance practices. This should be supplemented by considerable publicity efforts as proposed to be undertaken through the educational campaign.
- (c) The establishment in Hong Kong of an energy efficiency display and information centre, involving Government, power and oil companies, the Consumer Council, and possibly electrical appliance companies, should be considered further.
- (d) Further research into the patterns of energy consumption in all major energy-using sectors of the local economy should be carried out, with a view to developing a multi-sector data base to throw more light on domestic, commercial, industrial and transport energy consumption.
- (e) Further studies should be carried out to investigate options to promote energy efficiency in both existing and new buildings with a view to making recommendations. Various potential areas of energy savings include district water-cooled cooling systems, improved lighting or lift systems, etc.
- (f) Further consideration should be given to the introduction of an energy labelling system for electrical household appliances in Hong Kong and studies should be undertaken to explore the feasibility of this.
- (g) Statutory control should be introduced over the maximum overall thermal transfer values (OTTV) of new commercial and hotel buildings in the first stage, and should be extended later to other classes of buildings. A handbook on OTTV calculations should be published. Initially this handbook should be treated as a consultative document and a guide for building design during a trial period of sufficient length to allow refinement of the OTTV standards, if necessary, before any statutory control is to be introduced. The proposed OTTV control should be viewed as a first step to improve energy efficiency in buildings, with a view to the eventual establishment of a comprehensive building energy code to control the total building energy consumption, of which OTTV control would form but a part.

These recommendations were endorsed by the Executive Council in March 1992.

IV. Work Progress

4. Work on the various recommendations has been progressing steadily as summarised below.

Education Campaign

5. The education campaign on EEC was launched in March 1993. Announcements of public interest appealing to the general public to save energy have been placed on TV and radio. Posters and bookmarks bearing the same message have also been widely distributed. The targets for subsequent phases of the education campaign include the commercial sectors, residential sectors and possibly the transport or hotel sector.

Advisory Note

6. Since March 1993, we have distributed widely a set of advisory notes on good energy housekeeping targeted at developers, tenants and managers of commercial buildings. The advisory notes for domestic household and management companies of residential buildings have been distributed since April 1994. We are also preparing a set of notes to promote energy audits which are expected to be available by end 1994.

Energy Efficiency Display Centre

7. An energy efficiency display centre will be developed at the Science Museum with the sponsorship of the two power companies. The centre is expected to be completed by early 1996.

Energy Consumption Data

8. A survey of the energy consumption pattern of commercial buildings was done in 1991 and the findings are now being updated. The updated results as well as preliminary findings on the residential, transport and industrial sectors will be available later this year.

Energy Efficient Options

9. The EEAC has concluded that water-cooled cooling systems are more energy efficient than air-cooled cooling systems. Hence, we are looking into the possibility of providing more pump pits at the West Kowloon and Central and Wanchai reclamation areas to facilitate the use of seawater cooling by future developers.

Energy Labelling

10. We are now looking into the detailed arrangements for introducing a voluntary energy efficiency labelling scheme. To start with, household refrigerators will be covered and we hope that the scheme can be ready by end 1994/95.

Building Energy Codes

11. We are pursuing amendments to the Buildings Ordinance to empower the Secretary for Planning, Environment and Lands to make regulations for the purpose of promoting energy conservation in buildings, which at the initial stage would mean control over the OTTV of new commercial and hotel buildings. The regulations, which are under preparation, will require the external walls and roofs of these buildings to be constructed to have suitable OTTV and will require developers to provide information on such matters as the materials used in and the size and disposition of windows. The actual OTTV standards and the method of calculation will be stipulated in a code of practice to be issued by the Building Authority. The amendment bill has been introduced into LegCo on 20 April 1994. Subject to the enactment of the legislation and the subsequent promulgation of the regulations, we plan to implement controls around October 1994.

12. The introduction of OTTV controls is only the first step towards promoting the design and construction of energy efficient buildings. We are now developing energy codes in respect of lighting and air-conditioning, the drafts of which are expected to be available for consultation by end 1994. The eventual aim is to publish a comprehensive set of building energy codes to guide the design of buildings and their building services, electrical and mechanical installations for the purpose of achieving energy efficiency. These codes will also enable us to introduce other more flexible approaches of achieving energy efficiency in buildings:

- (a) system performance approach - specification of a maximum power consumption per unit floor area (W/m^2) for each building services system appertaining to each category of buildings and each functional area of a building; and
- (b) energy budget or energy cost budget approach - a requirement to demonstrate that the amount or cost of energy consumption (kWh/m^2 or $\$/m^2$) per year of a proposed building design is lower than or equal to that of a reference building of similar use and designed to meet all prescriptive standards.

V. Future Programmes

13. There is a general consensus in the EEAC that a stepping up in the pace of the Committee's work would be appropriate. In order to provide the Committee with better executive support to match with this expectations, we have earmarked a provision of \$2 million for upgrading the energy efficiency sub-division in the Electrical and Mechanical Services Department to an Energy Efficiency office in 1994/95.

14. The EEAC is also aware that economic instruments, e.g. pricing and tax, have been mooted as a means of promoting ECC. The general feeling is that our policy should be to concentrate on existing elements (public education, information, advice, introduction and enforcement of energy efficiency standards) and to fully exploit the savings which they can yield first before turning to the use of the price mechanism. In the meantime, we should monitor overseas developments regarding the adoption of carbon and energy taxes and their effect in the countries concerned. On a longer term basis, the need or otherwise for the introduction of similar tax measures in Hong Kong should be kept under review.

VI. Conclusion

15. Members are invited to note the work progress on the implementation of our recommended energy efficiency and conservation programmes and offer any comments which they may have.