

By post and by fax at 2537 7278

26 June 2015

Mr WONG Kam Sing, JP
Secretary for the Environment
Environment Bureau
16/F, East Wing, Central Government Offices
2 Tim Mei Avenue
Tamar, Hong Kong

Dear Mr WONG

Views on Energy Saving Plan for Hong Kong's Built Environment 2015-2025+

With reference to the captioned Plan released by your Bureau on 14 May 2015, I am pleased to provide herewith the views and suggestions of the Institution on the subject for your consideration.

The Institution looks forward to providing our expertise and joining hands with the Administration to build a green Hong Kong.

Thank you.

Yours sincerely



Ir Victor CHEUNG Chi Kong
President
The Hong Kong Institution of Engineers

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VCCCK/WC/ML

Enclosure

**Views from the Hong Kong Institution of Engineers on
Energy Saving Plan for Hong Kong's Built Environment 2015-2025+**

Overview

The Hong Kong Institution of Engineers (HKIE) strives to improve the quality of living of the people in Hong Kong and foster a steady and balanced development of our society, on its economy, environment and community. We feel encouraging to see the proposed Energy Saving Plan (the Plan) laying out the roadmap for the public and private sectors to work together for reducing energy use, and therefore aiming at reducing carbon emission and improving environment, which are the pressing environmental challenges to our daily life. Our society needs solutions for a sustainable future. We believe that engineers play an important role on advising and implementing many of the initiatives set forth in the Plan and the HKIE would like to take this opportunity to provide suggestions that might enhance the policy formulation, on its priority and implementation strategy.

General

2. We consider that professional engineers should play a key role in capacity building as well as social mobilisation by organising training workshops, supportive campaigns and stakeholder engagements. The HKIE and its members have been actively supporting the Government's initiatives that help to build a better Hong Kong. Issues of energy involve all sectors of the engineering disciplines. We endeavor to engage the public to understand the challenges involved and support the Government to formulate the policy that can deliver the expected outcomes.

3. We should also see this as a good opportunity to develop further the institutional setup and technical know-hows on improving the business environment of our energy sector. In the long run, this can enhance the competitive advantage of Hong Kong.

Setting Energy Saving Targets

4. We support the Plan's target to reduce Hong Kong's energy intensity by 40% by 2025 using 2005 as a base, through applying a multi-pronged approach that spans across educational, social, economic and regulatory means. The target is considered to be pragmatic. The HKIE is interested in supporting on developing the details of the roadmap generated out of this exercise.

5. We also understand that Hong Kong Green Building Council (HKGBC) has proposed the HK3030 Campaign - a roadmap of achievable targets focusing on the demand side of electricity consumption, in which the absolute electricity consumption of buildings in Hong Kong can be reduced by 30% by 2030, from 2005 level. The roadmap

has been widely circulated and generally accepted by the public to reduce carbon emissions from buildings. The Government should coordinate with the HKGBC and relevant parties to rationalise the targets.

6. Given that there may not be a correlation between the Government's proposed energy intensity reduction target (40% by 2025 using 2005 as the base) and the HKGBC's absolute electricity consumption reduction target, the Government explains that there is a need to deliberate on the technical details with stakeholders and experts. In this regard, the HKIE's professional engineers can play an important role to make contribution to the technical issues, promote energy conservation through public education, and support the application of smart technologies and deployment of advanced metering infrastructure to address energy issues.

Policy Priorities and Implementation Strategy

7. We support that the Government should formulate an unambiguous policy on energy saving across all sectors. Priorities, and therefore resource allocation, should be given to those areas that will have strong impact on implementation in terms of our environmental performance, financial implication and social values such as job creation. Given that a significant portion of our energy has been consumed by the buildings, the Government should direct more of their attention on formulating policy related to buildings. In recent years, the building industry has directed many resources on developing energy saving measures for the entire life-cycle of buildings, i.e. from design, construction to operation. The Government should capitalise these efforts and consult the industry for their effective implementation.

8. While the HKIE supports the suggestion of having the public sector to lead by example, the Government should engage the private sector where possible to encourage their involvement and contribution. The policy should address the issues affecting their participation and maximise the market force. Incentives, such as financial support and approval facilitation on energy saving measures, should be considered to boost the uptake of private participation. For example, energy retrofit of existing buildings is a viable business in many countries. The Government should work with the industry and eliminate the barriers for business. This can attract more investment funds from the market to finance the projects and reduce the reliance on public funding.

9. The HKIE supports any policy that helps ensure a level playing field and encourage technological innovation. We observe that the development on energy business, and the technology supporting it, are advancing very fast worldwide. The Government should work out the institutional arrangement that facilitates the adoption of cutting-edge technology and improves the competitiveness of our industry. Smart energy and decarbonisation technologies should be encouraged in Hong Kong.

10. The success of energy efficient building requires innovation of building design and adoption of renewable energy. In the past, the industry faced many challenges on realising good designs. It is highly recommended that stronger collaboration of relevant

authorities and professionals can be maintained and the approval process of innovative designs can be streamlined.

11. Related regulations on building energy efficiency, i.e. the Buildings Energy Efficiency Ordinance (BEEO), Building (Energy Efficiency) Regulation (B(EE)R), and Energy Efficiency (Labelling of Products) Ordinance (EELPO), are in place. Some have been implemented for years. The Government should carry out regular review exercise to examine if the results are favourable. In particular, mechanism should be sought to determine if more stringent requirements are required to achieve a better performance of our buildings.

12. Behaviour change is a hot topic for the energy saving front. Education is the key for success. The Government should formulate a comprehensive campaign that can extend its outreach to every citizen of Hong Kong. The HKIE can be the partner to provide the necessary supports on technical know-hows and engagement to the professional community. Together with our professional engineers, we can generate right messages and deliver the required actions.

Energy Wise Green Buildings

13. The strategies for the building sector should consider different measures addressing the issues of new buildings and existing buildings. On new buildings, we should consider the effectiveness of existing regulations and incentives that facilitate green building design. On existing buildings, we should focus on the standard of facility management, behaviour change and the uptake of energy retrofit.

14. From the building perspective, we would like to express our concerns on the difficulties to achieve the Government's targets on the Plan. Based on the success of HK\$450-million Buildings Energy Efficiency Funding Schemes, which subsidises building owners for conducting energy-cum carbon audits and energy efficiency projects under Environment and Conservation Fund (ECF), it is suggested that the Government should work out a scheme in the coming agreements with the two power companies to set aside funding that could be used as incentives for building owners to reduce the energy consumption in existing buildings.

15. We support to request the power companies to issue Renewable Energy Certificate (REC). Moreover, we suggest that such REC should be considered in the Green Building Labelling Scheme, which could provide incentives to the building owners.

16. Without the universal treatment on the externality cost of carbon, it might be necessary to have some mechanisms to support wider use of renewable energy. Like the policies in many different countries, various incentive programmes are available and the increasing trend provides solid evidences of the success of the initiatives.

17. To encourage more usages of renewable energy sources, inter-departmental coordination within the Government would be helpful to speed up the approval process for innovative technologies.
18. At the same time, we support the option to encourage the growth of the energy services market, which can become a significant part of Hong Kong environmental industry, instead of relying on the public subsidy scheme.
19. We welcome the approach taken by the Government to encourage information disclosure. Hong Kong's publicly listed companies are now taking steps to disclose various environmentally-related information under the Hong Kong Exchanges and Clearing Limited voluntary Environmental, Social and Governance Reporting Guide, and it is also planned to make it into a "comply or explain" arrangement. Similarly, Environmental Protection Department and other organisations have also developed a carbon footprint repository/ platform for companies to disclose their energy related information. To ensure the credibility of the data/ information, we suggest that professional competence should be required for data/ information verification before disclosing to the public, similar to the professional requirements under the Building Energy Efficiency Ordinance. The engineers of the HKIE can play an active role in providing professional advice on quantifying greenhouse inventory and verifying the engineering/ environmental related data.
20. The energy performance of the building is largely dictated by the building design. We support regular review and enhancement of the building heat transfer standard with reference to international practices and changes in the local environment. Low energy passive design should be encouraged.
21. We also support the implementation of the Building Energy Code (BEC) to promote the energy efficiency in the design, installation and maintenance of building services facilities. The Code should be reviewed periodically to incorporate possible improvements with technology advancement.
22. Furthermore, to promote energy saving in households, we support the Mandatory Energy Efficiency Labelling Scheme (MEELS) which could help consumers make better informed decision in their choice of electrical appliances and also encourage suppliers to introduce more energy efficiency products.
23. The community is expected to see an emergence of more Demand Side Management (DSM) and Energy Efficiency and Conservation (EE&C) initiatives with different programmes which focus on suiting the community's needs and priorities, such as helping the disadvantaged, encouraging involvement of wider community or targeting the largest potential saving opportunities. Collective effort from all sectors is needed and public acceptance is required on the pace, nature and costs of programmes to be implemented by the community.

24. Since the energy use of the existing building accounts for a very significant share of the total energy use, special attention should be made in this category. Cities around the world with well-developed infrastructures have effective programmes to address the growing needs of reducing the energy use of these buildings. We agree that retro-commissioning and retrofitting are necessary measures to promote identifying the extent of the actual situation first and then taking cost-effective steps to improve the efficiency of the overall building performance. Even though the low hanging fruits can be picked through technical advancement, further financial supports and incentives would be needed to push for deeper saving.

25. Green lease will be a suitable tool to let both landlords and tenants to contribute the effort and share the benefits together. We believe that green professionals can play a role to support both sides through preparing the necessary data-sharing to promote the energy reduction.

26. To drive for continuous improvement on energy management, energy users should have sufficient understanding of their energy usage pattern. This could be enabled through wider application of modern devices such as smart meter, home energy management system, etc. together with user-friendly analysis tools. The availability of comprehensive energy usage information could help the end users develop greater energy awareness and identify energy saving opportunities.

27. We support the deployment of Advanced Metering Infrastructure (AMI) which is a fundamental platform to enable consumption data collection and provision of data-based behavioural programmes to customers, thus allowing more active demand-side management initiatives and corresponding tariff packages to be designed to suit consumer needs in optimising their usage and conserving energy. This could also help to drive change in the consumption behaviour in the long run.

Energy and Transportation

28. We support the reform of effective use of fuel source of the vehicles, more effective routing of the bus services, and encouragement of fuel-efficient driving habits. We believe that professional community can provide the necessary information to the public to improve their daily living.

Energy Business for Low Carbon Economy

29. We support the Government's vision to develop Hong Kong into a low carbon economy. Out of this agenda, some initiatives are being implemented to realise the plan, such as the pilot project of developing Smart City concept in East Kowloon. We expect more efforts from the Government to create the environment for energy business that supports our low carbon economy. Many new business opportunities can be generated on the areas of urban planning, infrastructure, information and communications technology, transportation, logistics, power generation, waste and resources etc.

30. In building a smart city, we have to leverage on technology to implement the concept of smart grid to enable better energy saving and more efficient energy management. The introduction of smart grid technology into traditional electricity grid would provide an effective means in dealing with environmental and energy issues.

31. We also believe that distributed energy generation can diversify the energy source. While we should maintain a reliable baseline power source from the two power companies, distributed energy, like solar, biofuel, waste-to-energy etc. will be able to provide small-scale generation that can ease the overall peak load.

32. The demand of green buildings is escalating in recent years as more and more people are looking for quality environment. We believe that green product is a business area that has high potential in Hong Kong. Products on energy-efficiency, water saving, waste treatment, smart on-line-off-line are the key areas. The Government, along with its agencies on technologies, should promote more R&D works and start-up businesses, and help to promote the “Made in Hong Kong” brand worldwide.

Further Suggestions

33. It is noted from Figure 1 on page 14 of the Plan that Towngas and LPG accounted for 17.2% of total energy end use in Hong Kong in 2012 while only 31% of which was used on Transport from Figure 5. Every sector should have a role to play in energy saving. We understand from the electricity bills of the two power companies that there is a chart which can provide the electricity consumption level of the past 25 months. With an understanding of their electricity consumption pattern, customers can manage their energy usage more efficiently and effectively. We suggest the Government to review if it is practicable for the Towngas and LPG to present the chart in their gas bills for their customers.

34. Adequate resources including financial support are required for organising more educational programmes and developing more learning tools in order to mobilise wider community participation. Apart from controlling the energy consumption of new buildings through compliance of enhanced building energy code, adequate financial support for retrofitting existing buildings with new end-use energy-efficient packages and demand-side management scheme is equally important as old buildings take up the majority of building stock in Hong Kong and can play a key role in reducing overall energy consumption in the community.